DOCUMENT RESUME

ED 310 720 IR 013 682

AUTHOR Kirkwood, Adrian
TITLE Access to Microcomputing Equipment for Study Purposes--Undergraduate Students in 1986. Findings from the Costs/Access Survey, 1986. Report No. 7.
INSTITUTION Open Univ., Walton, Bletchley, Bucks (England). Inst. of Educational Technology.
PUB DATE Sep 87
NOTE 63p.; for a related report, see ED 294 557.
PUB TYPE Reports - Research/Technical (143) -- Tests/Evaluation Instruments (160)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Computer Assisted Instruction; *Distance Education; Foreign Countries; Higher Education; *Microcomputers; Open Universities; Questionnaires; *Student Costs; Surveys; *Undergraduate Students
IDENTIFIERS *Computers Equity; *Open University (Great Britain)

ABSTRACT

A survey of new and continuing undergraduate students was undertaken at the end of 1986 to obtain information on the related issues of costs of studying and access to equipment for study purposes. Questionnaires were sent to a sample of 2,400 students at the Open University (OU)--1,200 students taking their first OU course and 1,200 continuing students. The overall response rate was 75.4%. Analyses of the student responses indicated that one third of the students (33%) have access to some kind of microcomputer than can be used for OU study purposes, of these, 18% have a microcomputer at home; male students are far more likely than female students to have access to micro equipment; the quality of access that men have to micro equipment is better than for women; and that access is best for students taking courses in mathematics, technology, or maths/science/technology. This report provides analyses of the data in both narrative and graphs for access to microcomputers by age, OU status, sex, occupation, region, and course profile. Data are also analyzed for various factors related to the use of microcomputing equipment in the home; access to a microcomputer at work; features of the microcomputer system to which students have access and their experience in using microcomputers; and the effect of the home computing policy on students' study plans. Additional survey data, a tally of student responses to seven questions on the 1986 costs/access questionnaire, and list of reports available from the Student Research Centre in the Institute of Educational Technology are appended. (2 references) (CGD)

STUDENT RESEARCH CENTRE

Institute of Educational Technology, The Open University,
Walton Hall, Milton Keynes MK7 6AA

Report No. 7

ACCESS TO MICROCOMPUTING EQUIPMENT FOR STUDY PURPOSES - UNDERGRADUATE STUDENTS IN 1986

Findings from the Costs/Access Survey 1986

Adrian Kirkwood

September 1987

IET

Acknowledgements

Carrying out the survey of students' costs/access to equipment and analysing the results is the work of a number of members of IET. I would, therefore, like to acknowledge with gratitude the work of:

Sue Blacklock, Beryl Crooks, Gill Kirkup Charles Stannet and Betty Swift	-	*for their contributions to the design of the survey*
Christine Wareham and the Survey Processing Office	-	*for distributing the questionnaires and processing the results*
Jane Lewis	-	*for the presentation of this report*

****
****

CONTENTS

1. INTRODUCTION

At the end of 1986 a survey of new and continuing undergraduate students was undertaken on the related issues of 'costs of studying and access to equipment for study purposes'. Questionnaires were sent to a sample of 2,400 students (1,200 students taking their first O.U. course and 1,200 continuing students). The overall response rate was 75.4% when the data was analysed in March 1987.

This report presents an analysis of students responses to the seven questions concerned with access to microcomputing equipment for study purposes. Relevant extracts from the questionnaire are reproduced in Appendix 2 to this report.

The main report is preceded by a brief summary of findings, with the survey data appearing in tabular form in Appendix 1.

2. SUMMARY OF FINDINGS

- One third of students (33%) have access of some kind to a microcomputer that can be used for O.U. study purposes. 18% have a microcomputer in their home.
- Male students are far more likely than female students to have access to micro equipment - twice as many men as women have access in the home.
- The quality of access that men have to micro equipment is better than for women with access and the specification of equipment tends to be better.
- Access is best for students taking courses in Mathematics, Technology or Maths/Science/Technology.

Access at home

- 60% of students with home access have their equipment permanently set up.
- More than twice as many students with home access have their micro equipment in a 'private' area than in a 'public' part of the house.
- Over 45% of students with home access have their micro equipment set up in a location with convenient access to a telephone point.
- Female students appear to be more aware than male students of the inconvenience to others that can be caused by the operation of micro equipment at home.
- Over half of the female students with home access report that their husbands make frequent use of the micro equipment, while only a twelfth of male students report such use by their wives. A higher proportion of female students report frequent use of equipment by their children.

Access at work or in another location

- One third (33.9%) of students working 'in education' report having convenient access at work to suitable microcomputing equipment, although access is usually shared with many others.

- Not only are men more likely than women to have access to micro equipment at work or elsewhere, they are also more likely to be the sole user of such equipment or share it with only 1 or 2 others.

Features of micro equipment to which students have access

- Generally, the equipment to which students have access at work or in some other location is of a higher specification than that used in the home.

- Overall, 8.4% of students have access to a microcomputer with the MS-DOS operating system (7.5% of those with home access; 37.1% of those with access at work/elsewhere).

Experience of using micro equipment

- Over one eighth of all students (13.2%) had already used micro equipment in their OU work. This represents more than a third of students with access to micro equipment.

- Students taking courses in all faculties had made use of micro equipment in their studies, although students of Mathematics, Technology or Maths/Science/Technology were more likely to have done so.

- The most widespread use of micros was for word processing. Two-thirds of those who had used a micro in their studies had utilised software for this purpose.

- About a fifth of students who had used a micro in their studies had used the equipment - to log into the ACS mainframe (22.9%); - to run course-specific software (18.9%); - to utilise general purpose software for spreadsheet (22.6%) or for Database/Information Retrieval (20.8%).

- A quarter of those who had used micro equipment for OU studies had done so since 1982 or before. Mostly these were male students taking courses in Technology, Mathematics, Science or Maths/Science/Technology. More recently micros have been utilised to a greater extent by female students and those taking courses in Arts, Social Sciences and Education.

- Almost half of all students report making some use of computers in their normal work situation ('Frequently' = 21.2%, 'Sometimes' = 26.1%).

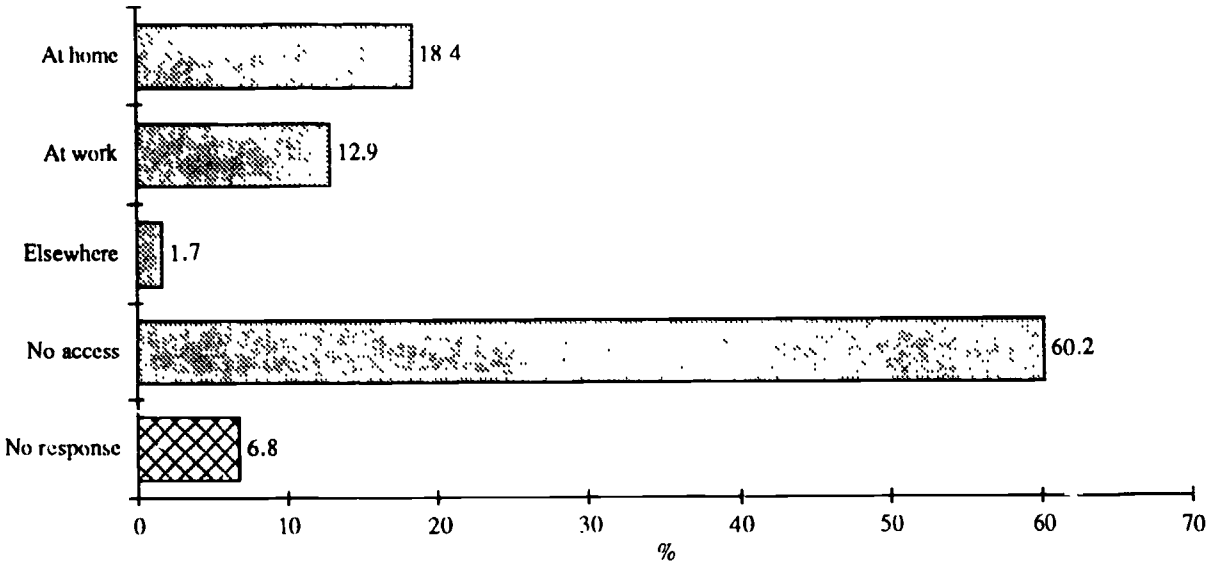
Effect of Home Computing Policy

- A third of students (33.3%) indicated that they might reconsider their study plans in the light of the Home Computing Policy. A quarter of respondents (25.1%) reported that they would still register for courses with a computing element and a further third (33.6%) declared that they had no plans to study such courses.

3. ACCESS TO MICROCOMPUTING EQUIPMENT

Students were asked if they had access to a microcomputer that could be used for O.U. study purposes (excluding access to an O.U. HECTOR micro) and, if so, to indicate the location which was most convenient. Figure 1 shows the overall responses.

Figure 1. Access to a microcomputer for study purposes
(Base: All survey respondents)



One third of undergraduate students have access of some kind to a microcomputer, although less than a fifth have access in the home. The 1984 Audio Visual Media Survey (Grundin, 1985) - the most recent general survey of students' access to equipment for study purposes - indicated that

> "almost half the students have access to microcomputers somewhere, but only one third have them at home".

However, the current findings cannot be compared directly with the data from the 1984 survey for the following reasons.

(a) The 1984 survey was of students registered on 16 new and seven continuing courses, while the 1986 survey involved a more general sample of undergraduate students taking any current course;

(b) the 1986 survey took a narrower definition of a microcomputer than did the 1984 survey questionnaire. In the introduction to the 1986 access questions students were given this guidance:

> "By *microcomputer*, we mean a reasonably sophisticated microcomputer-based system, which can realistically be used for home study purposes. We do not mean the sort of equipment used in study-centre terminal rooms: those terminals can

be used only when connected to the University's mainframe computer. Nor are we concerned with the cheaper, low-powered, games machines which you use with your domestic television, and which load in off-the-shelf games from a cassette player".

(The full introductory comments can be seen in Appendix 2).

Accordingly, we would expect the more recent data to indicate a lower level of access than that reported for the 1984 survey.

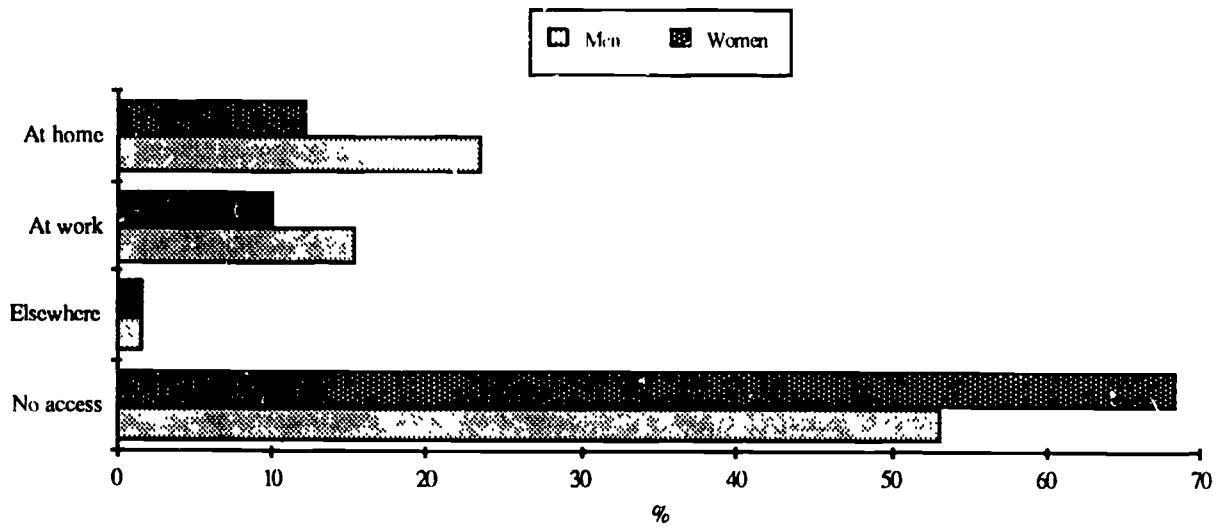
In the country as a whole, there is a growth in home access to microcomputing equipment. For example, the General Household Survey indicates that 13% of households had a home computer in 1985 compared with 9% in 1984 (OPCS, 1986). The extent of access to fairly sophisticated micro equipment suitable for OU study purposes is, however, very difficult to assess.

The overall responses for microcomputer access were analysed further in relation to demographic and other data collected in the survey. Some interesting variations in patterns of access were revealed: these are discussed below:-

(i) **Access by Sex**

Over 40% of male students report having access to a microcomputer, compared with only 24% of female students. When considering access in the home, almost twice as many men as women have such access (23.6% compared with 12.2%). Figure 2 shows the different pattern of access - the details appear in Table 1 in Appendix 1.

Figure 2. Access to a microcomputer - by sex.
(Base: All survey respondents)



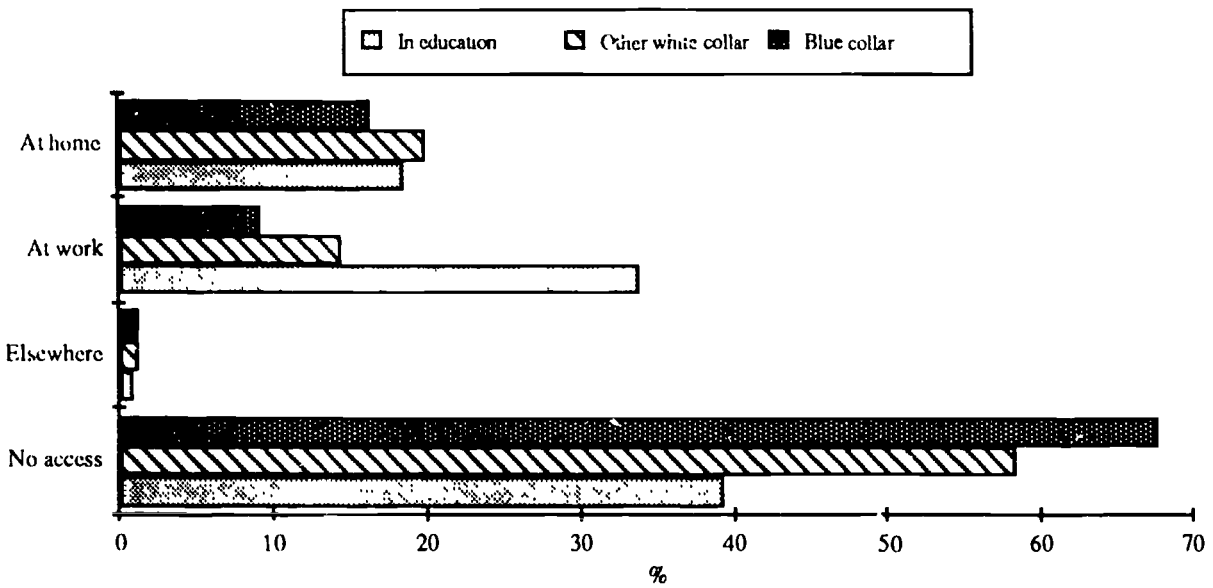
(ii) Access by O.U. Status

New students were slightly less likely than continuing students to have access to a microcomputer for study purposes (29.3% compared with 34.0%). Further details appear in Table 1 in Appendix 1.

(iii) Access by Occupation

Students working 'in education' are more likely than others to have access to a microcomputer, due mainly to far greater access at their place of work. Figure 3 shows the pattern of access by occupation, with greater detail appearing on Table 1 in Appendix 1.

Figure 3. Access to a microcomputer - by occupation category.

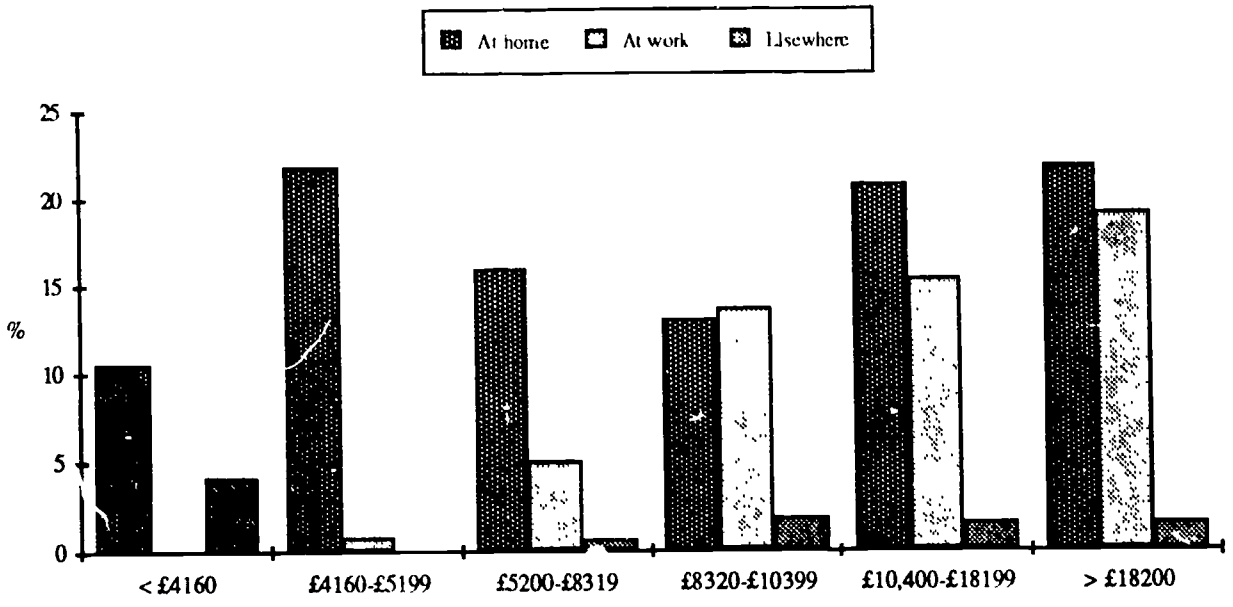


(iv) Access by Household Income

Access to a micro that could be used for study purposes tends to rise in line with level of household income. Overall access ranges from 14.6% of those in the 'under £4,160' income bracket to 42.6% of those with a household income of '£18,200 and over'.

While access at work rises with level of income, access at home and elsewhere is not so clearly related. Figure 4 illustrates the patterns, while Table 2 in Appendix 1 presents the data.

Figure 4. Access to a microcomputer - by household income.



(v) Access by O.U. Region

Access of any kind to a microcomputer for study purposes (i.e. at home, at work or elsewhere) is greatest in Wales, East Anglia and the North West (Regions 10, 06 and 08). Access is lowest in the North, Scotland, the South West and London (Regions 09, 11, 03 and 01), but in all cases was in excess of 27% of respondents. Details of access by O.U. Region appear in Table 3 in Appendix 1.

(vi) Access by course profile

Students were asked to indicate (by faculty or faculty grouping) the range of courses they had studied or planned to study in the future. As might be expected, students taking courses in Mathematics, Technology or Mathematics/Science/Technology were more likely to have access to microcomputing equipment for study purposes. Nearly half the students in each of those categories (MST = 48.7%, M = 48.6%, T = 47.4%) had some kind of access. The relatively small group of students taking mainly Education courses also tended to have good access (46.5%) due largely to appropriate equipment being available at their place of work.

Overall access was lowest for students specialising in Arts and Social Science subjects (A = 17.7%, D= 22.8%). The data for access by course profile appears in Table 4 in Appendix 1.

4. ACCESS TO A MICROCOMPUTER AT HOME

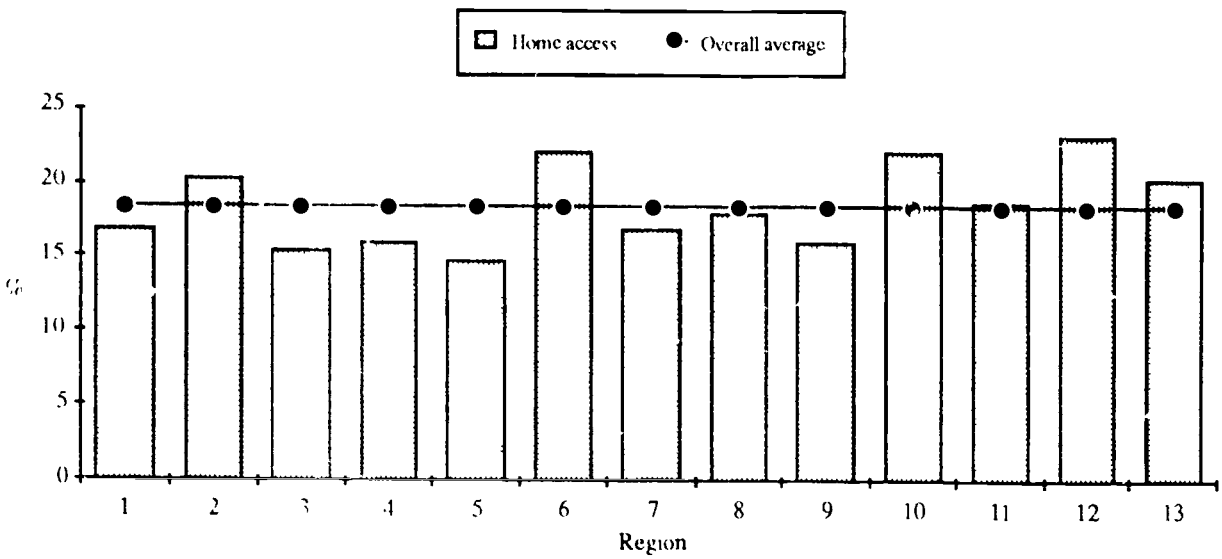
Over 18% of students have microcomputing equipment that can be used for O.U. study purposes in their own home (although, as we have already seen, twice as many men as women have such access). The data reveals some interesting variations in the pattern of home access by O.U. region and by the profile of courses studied by students.

The survey also collected information about ways in which the microcomputing equipment is set up and used in students' homes.

(i) Home access by O.U. Region

There are variations in home access across the country as shown in Figure 5.

Figure 5. Home access to a microcomputer
- by O.U Region

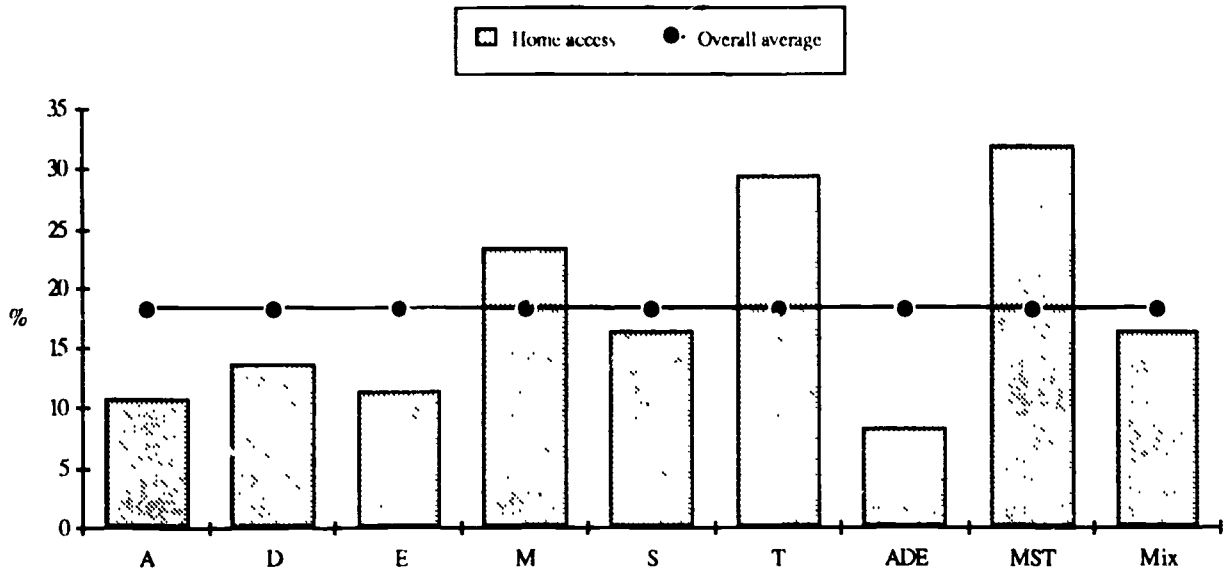


Home access is highest in Northern Ireland, Wales and East Anglia (Regions 12, 10 and 06) and is also above the overall average in the South and South East (Regions 02 and 13). Access at home is lowest in the East and West Midlands, the South West and the North (Regions 04, 05, 03 and 09). More details appear in Table 3 in Appendix 1.

(ii) Home access by course profile

Figure 6 shows the variations in home access to microcomputing equipment by course profile.

Figure 6. Home access to a microcomputer
- by course profile.



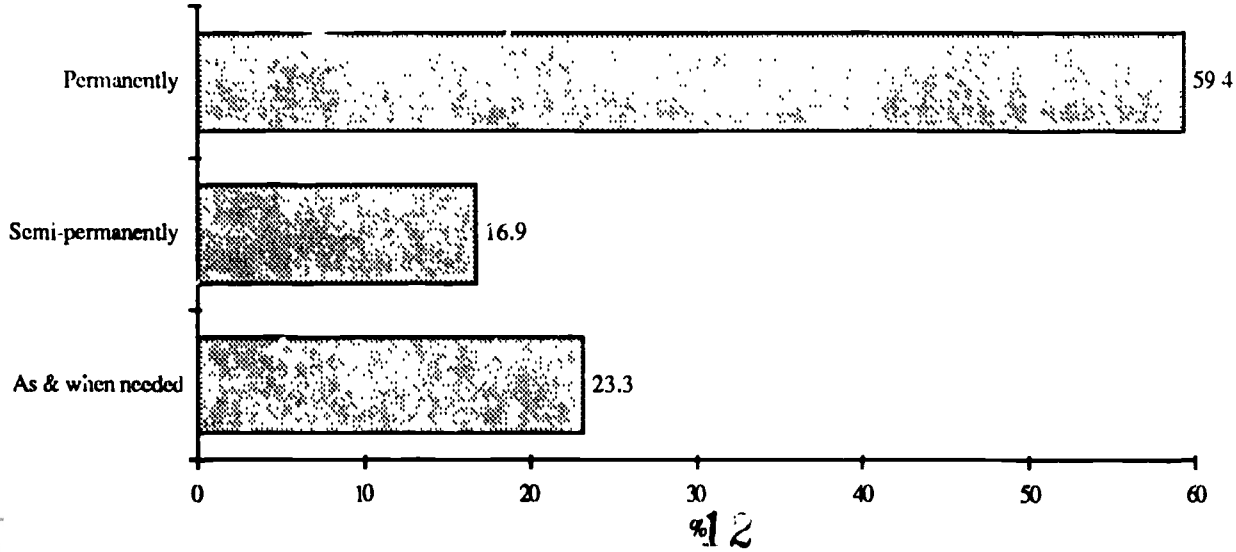
It is hardly surprising to see that home access is highest where students are taking courses in Technology, Mathematics or a mix of Maths/Science/ Technology. However, over 10% of students taking courses in Arts, Social Sciences and Education had home access. Table 4 in Appendix 1 provides details of access by course profile.

(iii) How microcomputing equipment is set up at home

We were interested in finding out about the convenience of access to microcomputing equipment, because even with home access, students may experience some difficulties in making use of their micro at times and in circumstances that are most appropriate for their O.U. studies.

Students who reported having access in their homes to micro equipment were asked to indicate how that equipment was set up - permanently, semi-permanently or only as and when needed. Figure 7 shows the pattern of responses - further details appear in Table 5a in Appendix 1.

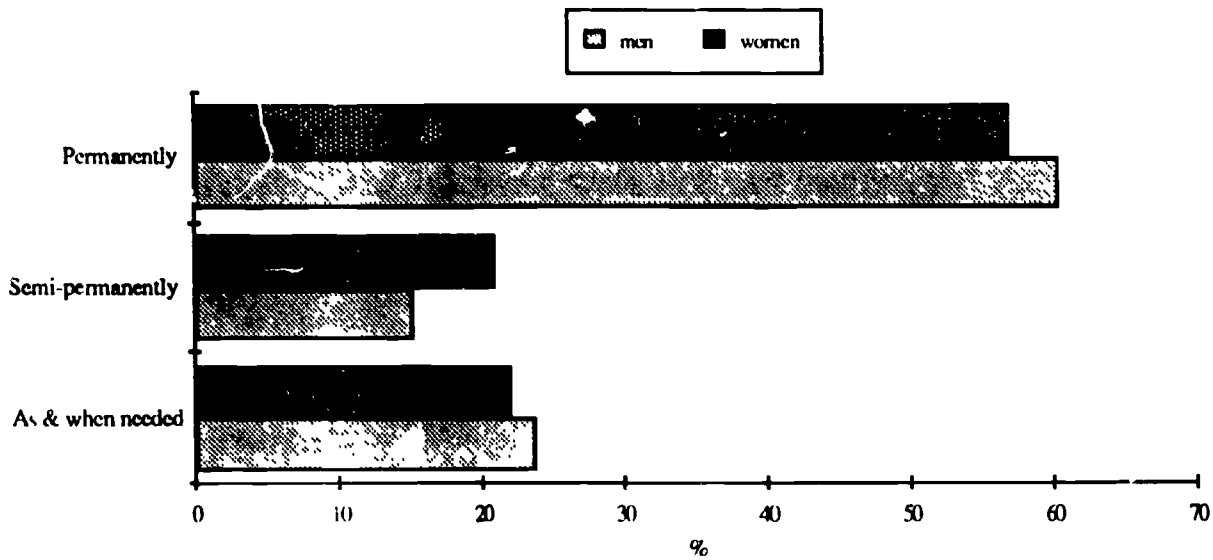
Figure 7. How micro equipment is set up at home.
(Base: Students with home access to micro equipment)



Of those students reporting having access to micro equipment in their homes, about 60% kept theirs permanently set up, while less than a quarter had to assemble their equipment for use only as and when needed.

When these responses are related to demographic and other data from the survey, some important variations are revealed - Figure 8 shows sex differences.

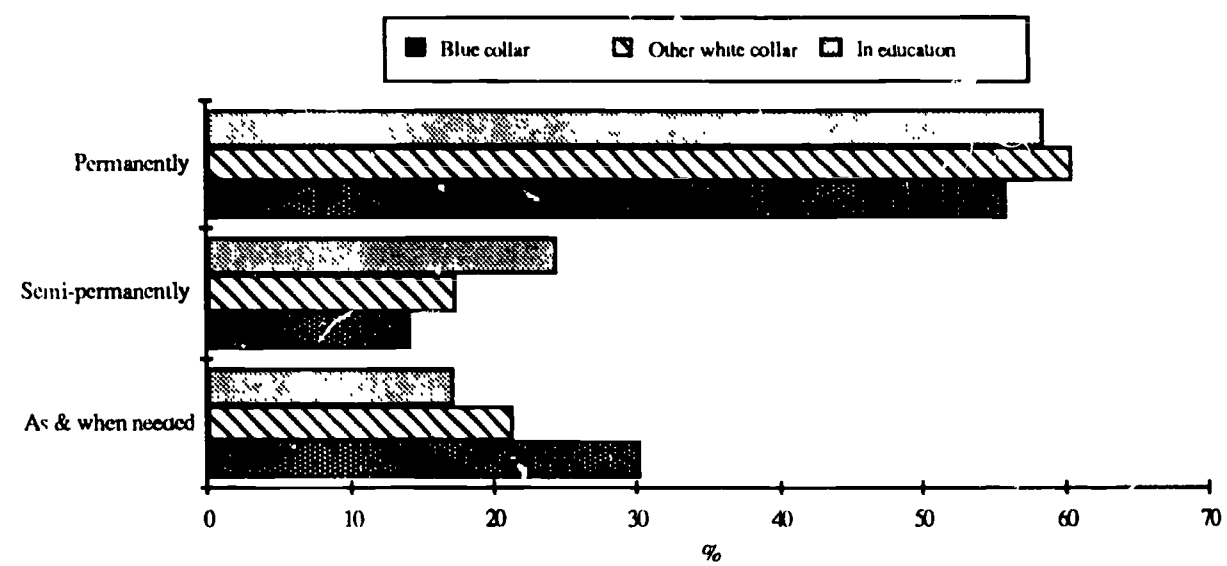
Figure 8. How micro equipment is set up at home - by sex.
(Base: Students with home access to micro equipment)



We have already seen that almost twice as many men as women have access to a micro at home. Men with home access are more likely to have their micro equipment permanently set up. So, overall, about twice as many men as women have micro equipment permanently set up in their home.

Figure 9 illustrates differences relating to the occupation category of students.

Figure 9. How micro equipment is set up at home - by occupation category.
(Base: Students with home access to micro equipment)



Those students working in blue collar occupations are more likely than other employed students to have to set up their micro equipment only as and when needed.

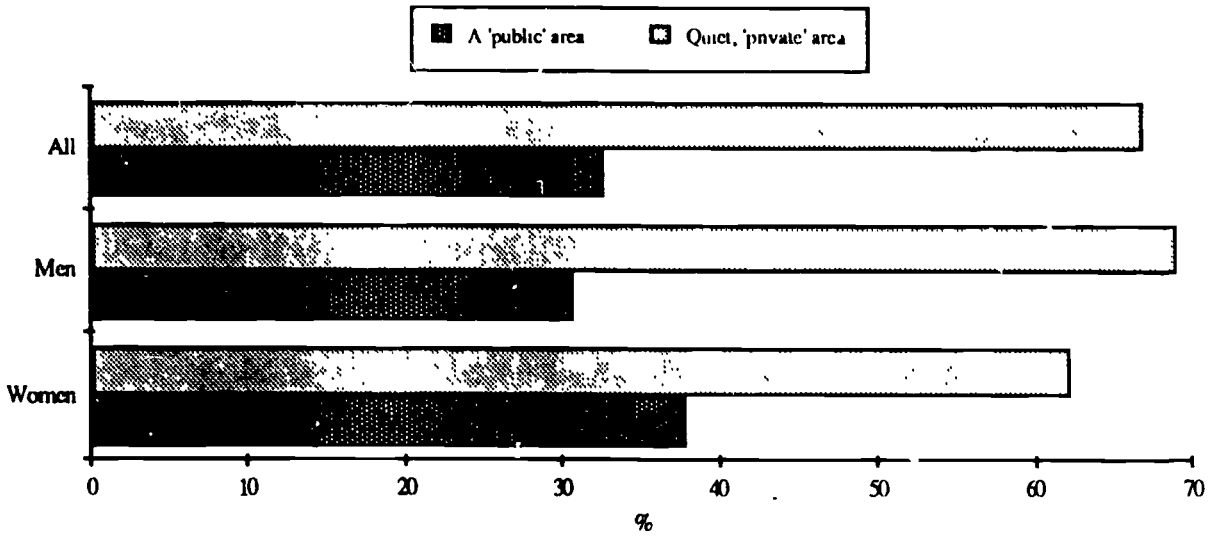
We saw in Figure 6 that students studying Maths/Science/Technology, Technology or Mathematics courses were most likely to have access to micro equipment.

Although a greater proportion of Technology students have access to micro equipment at home than do Mathematics students, the latter group is more likely to have their equipment permanently set up for use. The relevant data appears in Table 5c in Appendix 1.

(iv) **Where microcomputing equipment is set up in the home**

Students were asked to indicate whether the location of their micro equipment (when set up for study purposes) was in a quiet, 'private' area or in a 'public' part of the house (e.g. living room). Figure 10 shows the pattern of responses, including the sex differences in access.

Figure 10 Location of micro equipment when set up for use at home.
(Base: Students with home access to micro equipment)



Overall, more than twice as many students have their micro equipment in a 'private' area than in a 'public' part of the house (66.9% compared with 32.6% of those with home access). The proportion of male students who have their micro equipment set up in a 'private' area is greater than the proportion of female students.

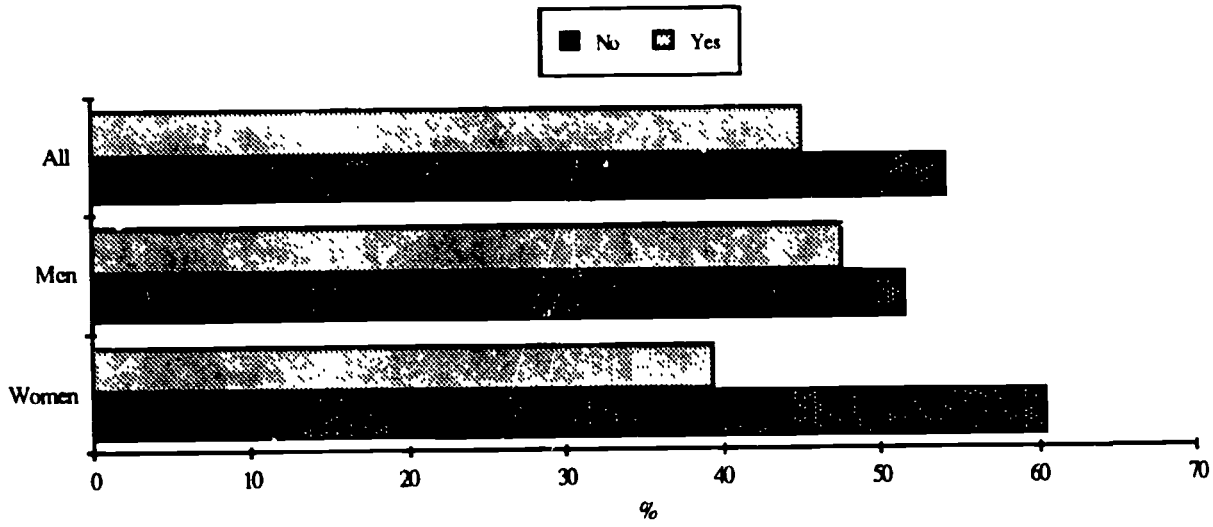
Variations are not particularly marked in terms of occupation category. Students working 'in education' are slightly more likely than those in other categories to have their equipment set up in a 'public' part of the house rather than in a 'private' area. Table 5b in Appendix 1 presents the data.

Of those students with home access taking Mathematics or Maths/Science/Technology courses, three times as many have their equipment set up in a quiet 'private' area as have it located in a 'public' part of the house. For those taking Technology courses, the corresponding

proportions are two to one. Slightly less than half of Science students with home access have their equipment located in a quiet 'private' area. The data is presented in Table 5c in Appendix 1.

We wanted to know if the usual location of the micro equipment in students' homes allowed convenient access to a telephone point (to make possible, through the use of a modem, communications with the University or some other network). Figure 11 shows the responses.

Figure 11 Location of micro equipment - convenient access to a telephone point
(Base: Students with home access to micro equipment)

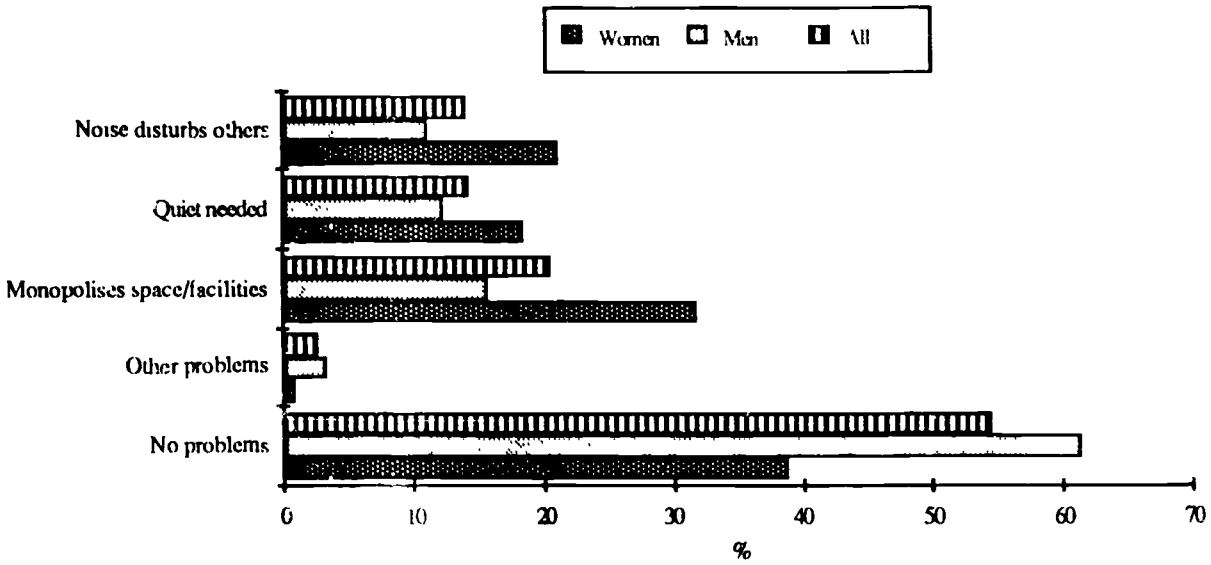


Approaching half of those students with microcomputing equipment at home (45.2%) have it set up in a location that gives convenient access to a telephone point. More details of the data appear in Table 5d in Appendix 1.

(v) Inconvenience caused to others by use of microcomputing equipment in the home

We asked students to report any inconvenience to other members of the household caused by the operation of microcomputing equipment. In particular, we asked whether (a) noise generated by the equipment disturbed others, (b) the need for quiet and a lack of distractions during the operation of the micro caused problems, and (c) the equipment (when in use) monopolised space and/or facilities that others wanted to use. Figure 12 shows the responses as a percentage of all survey respondents - further details appear in Table 6 in Appendix 1.

Figure 12. Inconvenience to other members of household when operating micro equipment.
(Base: Students with home access to micro equipment)



Although over half of those with home access reported no problems in terms of inconvenience to others, significant numbers considered that the operation of their micro equipment disturbed others.

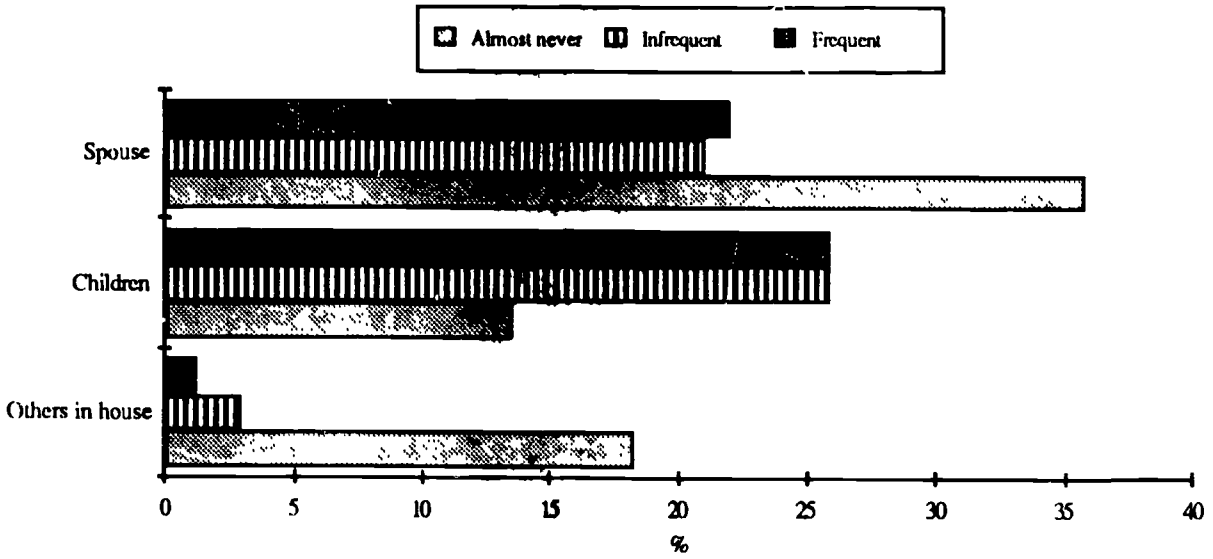
The greatest problem appears to be that when in operation the micro equipment monopolises space and/or facilities that others in the household may want to use. More than a fifth (20.5%) of those with micro equipment in the home reported this as a problem.

Female students appear to be more aware of the problems associated with operating micro equipment at home. Although only about half as many women as men have home access to a micro, the reporting of inconvenience to other members of the household does not reflect the same proportions. For example, 31.7% of women with home access found that the equipment monopolises space and/or facilities compared with 15.6% of men with home access. In contrast 61.2% of men with home access reported 'no problems' compared with 38.7% of women.

(vi) Use of microcomputing equipment by other members of household

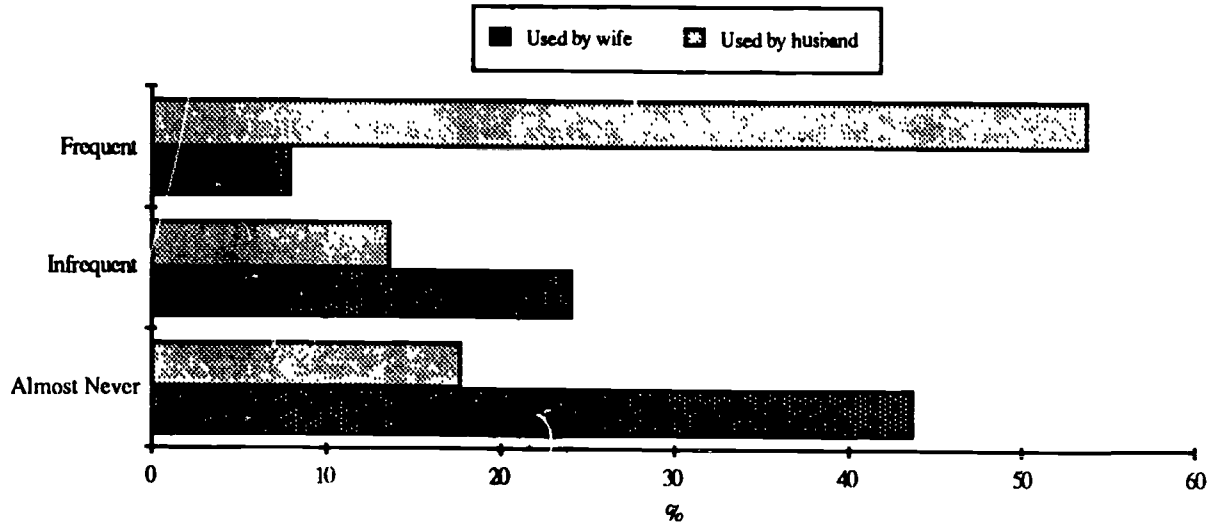
Students were asked to indicate how much use was made of the microcomputing equipment, to which they had access, by other members of their household. The overall pattern of responses is shown in Figure 13 - the data is in Table 7 in Appendix 1.

Figure 13. Use of micro equipment by other members of household.
(Base: Students with home access to micro equipment)



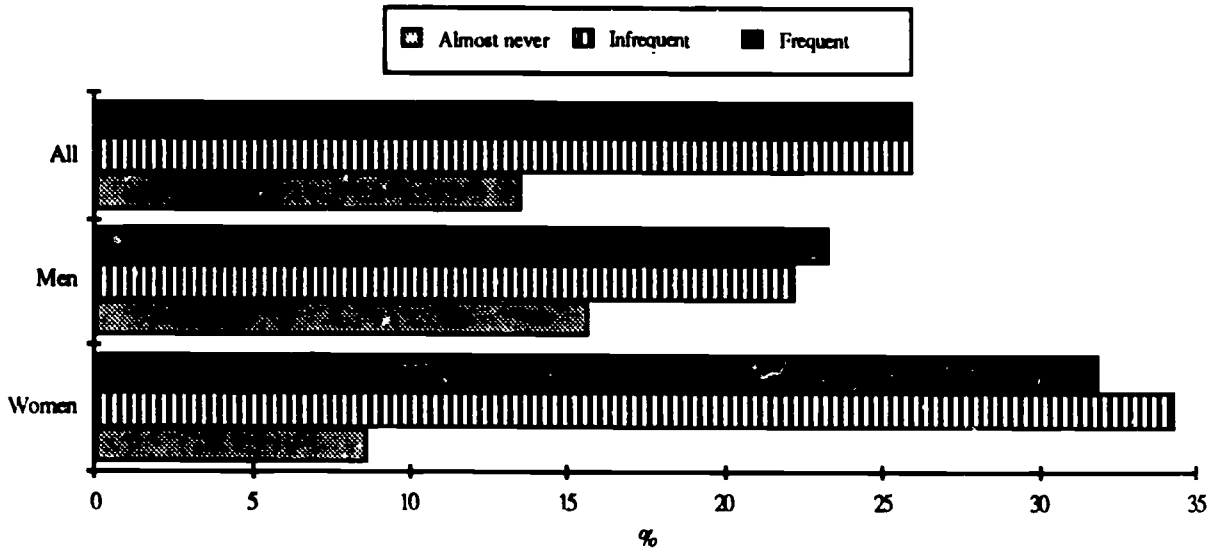
Children appear to be the most likely ones to make use of the micro equipment. The children of students working 'in education' are more likely to make frequent use of micro equipment than the children of students in other occupation catergories. However, the overall figures conceal dramatic differences in usage between husbands and wives of students, as shown in Figure 14.

Figure 14. Use of students' micro equipment by spouse.
(Base: Students with home access to micro equipment)



Over half of the female students who have access to micro equipment (53.7%) report that their husbands make frequent use of that equipment, while only a twelfth of male students with home access report frequent use of the micro by their wives (8.1%). Just over a sixth of husbands used the micro equipment 'almost never', compared with approaching half of the wives (17.8% compared with 43.7%). A higher proportion of female students report 'frequent' use of equipment by their children, as shown in Figure 15.

Figure 15. Use of students' micro equipment by children.
(Base: Students with home access to micro equipment)



The data suggests that female students tend to have access to 'family' computing equipment, while male students make use of equipment that is 'their own'.

5. ACCESS TO A MICROCOMPUTER AT WORK OR IN ANOTHER LOCATION

Almost 15% of students reported that the location providing the most convenient access to microcomputing equipment was outside the home (at work = 12.9%, elsewhere = 1.7%). The data appears in Figure 1 on page 3. Sex differences are not as marked as for access at home - two-thirds as many women as men have access at work (10.0% compared with 15.4%), while access 'elsewhere' is almost identical. (See Figure 2 on page 4 and Table 1 in Appendix 1).

We have already seen (Figure 3 on page 5) that over a third of those working 'in education' report having access to a suitable microcomputer at work, a much higher proportion than for those in other occupation categories. We have also seen that the higher level of household income, the more likely students are to have accesss to a microcomputer at work (Figure 4 on Page 6 and Table 2 in Appendix 1).

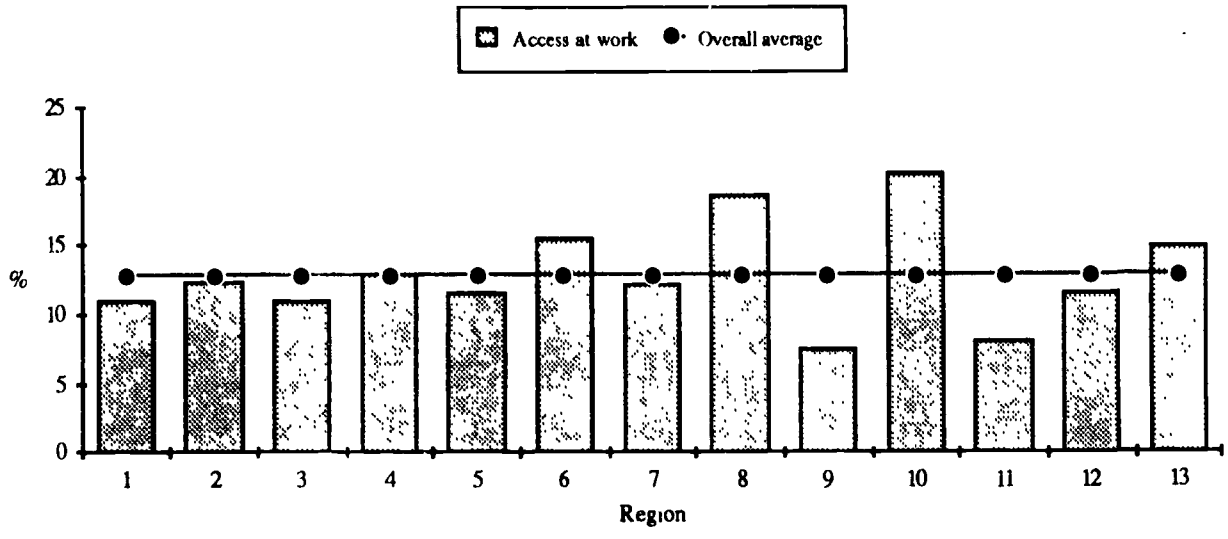
The data reveals some marked variations in access to microcomputing equipment at work by OU region and by the profile of courses taken by students. [The number of students indicating that their most convenient access was achieved 'elsewhere' is too small to make analysis worthwhile].

As we wished to learn something about the **quality** of access to micro facilities at work, students were asked to indicate the extent of control they had over the use of appropriate equipment.

(i) Access to a microcomputer at work by OU region

The pattern of access at work by OU region is shown in Figure 16. The data appears in Table 3 in Appendix 1.

Figure 16. Access to a microcomputer at work - by O.U. Region.
(Base: All survey respondents)

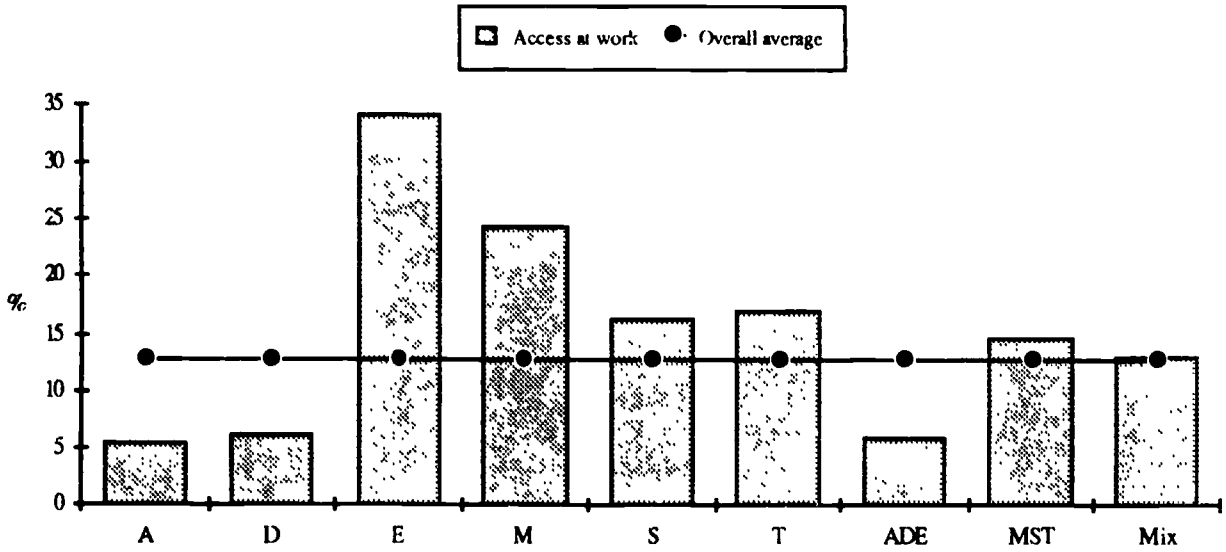


Access at work (as the most convenient location) is highest in Wales and the North West (Regions 10 and 08) and lowest in the North and Scotland (Regions 09 and 11).

(ii) Access to a microcomputer at work by course profile

Students taking mainly Education courses were more likely than others to find access at work the most convenient, as shown in Figure 17.

Figure 17 Access to a microcomputer at work by course profile.
(Base: All survey respondents)

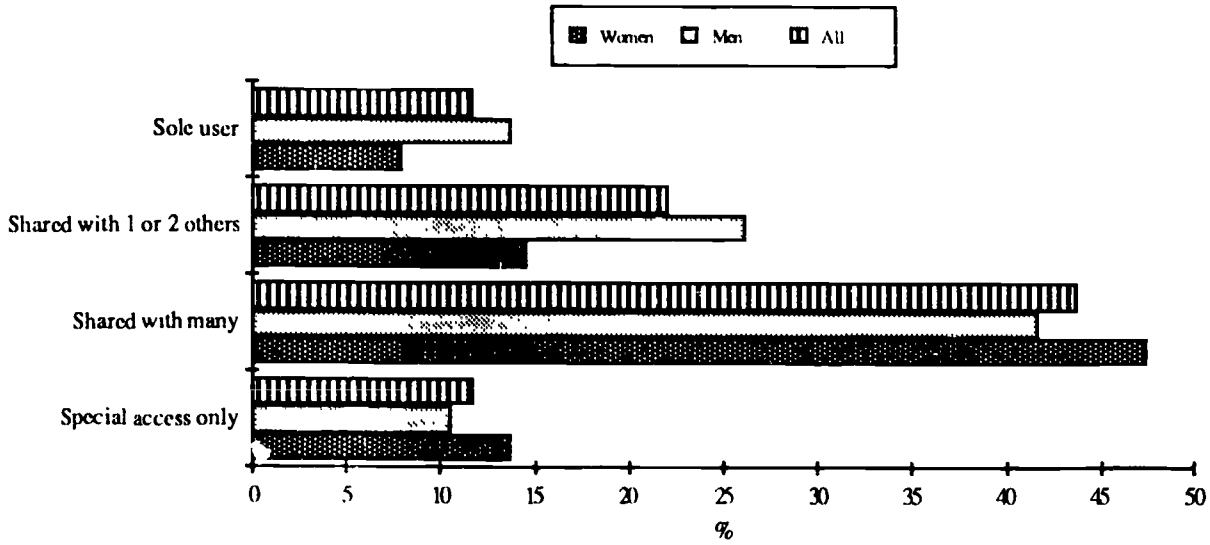


Over a third of Education students (34.2%) and almost a quarter of Mathematics students (24.3%) reported having convenient access at work. Very small numbers of students taking mainly Arts, Social Sciences or Arts/Social Sciences/Education courses had convenient access to micro equipment at work (A = 5.6%, D = 6.4%, ADE = 6.1%). The data appears in Table 4 in Appendix 1.

(iii) Control over use of micro equipment at work or in another location

Students were asked to provide information about the amount of control they exercise over the use of the micro equipment to which they have access at work or in some other location. They were able to indicate whether they were the 'sole user', if the equipment was shared with '1 or 2 others' or with 'many others', or if they could gain access 'only for special purposes'. The overall responses are shown in Figure 18, with the data appearing in Table 8 in Appendix 1.

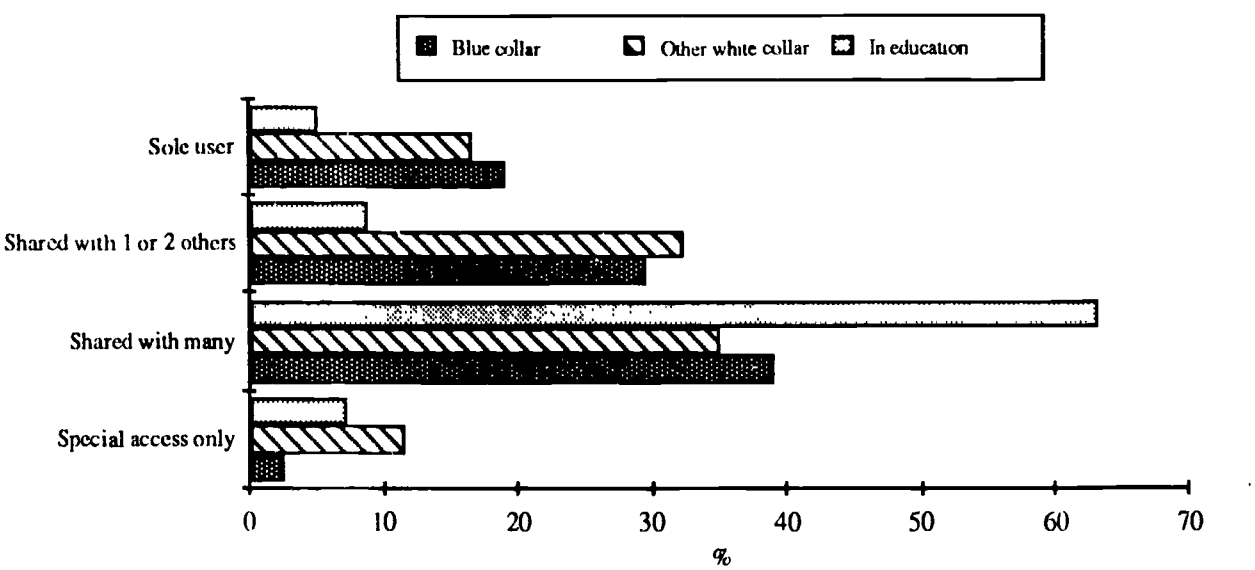
Figure 18 Access to micro equipment other than at home - extent of control over use.
(Base: Students with most convenient access to micro equipment at work or in some other location)



Not only do more men than women have convenient access to microcomputing equipment at work or elsewhere, they tend to have greater control over the use of the facilities. Forty per cent of male students report being the sole user or sharing with 1 or 2 others the equipment to which they have access, while only 22.6% of female students have that degree of access.

In terms of occupation category, there is a very marked difference between students working 'in education' and those in other categories:-

Figure 19. Access to micro equipment other than at home - by occupation category.
(Base: Students with most convenient access at work or in some other location)

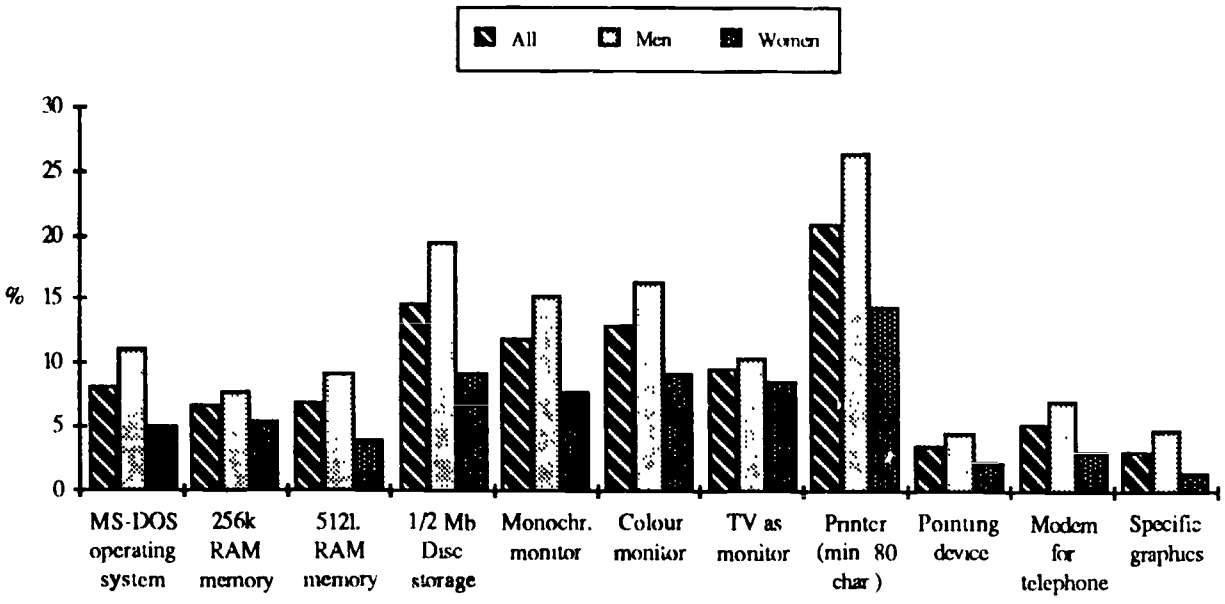


A very small proportion of students in education are the sole user of micro equipment (5.1%), while almost two-thirds (63.1%) report that they share facilties with many others. Further details appear in Table 8 in Appendix 1.

6. MICROCOMPUTING EQUIPMENT TO WHICH STUDENTS HAVE ACCESS

Students were asked to indicate the features of the micro system to which they have access using a list based upon the OU's home computing equipment specification (shown as Q24 of the questionnaire reproduced in Appendix 2). The overall responses are shown in Figure 20 below and the data appears in Table 9a in Appendix 1.

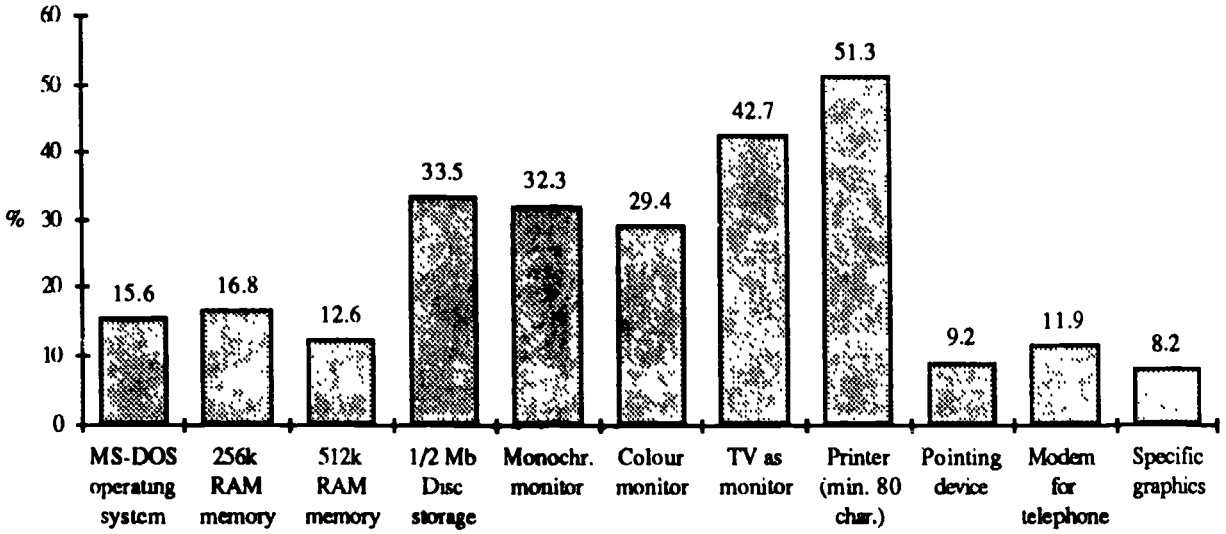
Figure 20. Features of the micro system to which students have access.
(Base: All survey respondents)



These overall figures conceal differences in access according to the profile of courses taken (or planned to be taken) by students. Access figures tend to be highest for students taking Mathematics, Technology and Maths/Science/Technology courses and lowest for students taking mainly Arts, Social Sciences and Arts/Social Sciences/Education courses. A breakdown of the data appears in Table 9b in Appendix 1. However, the small numbers of students responding to the affirmative to these questions means that caution is required when considering the data in Table 9b.

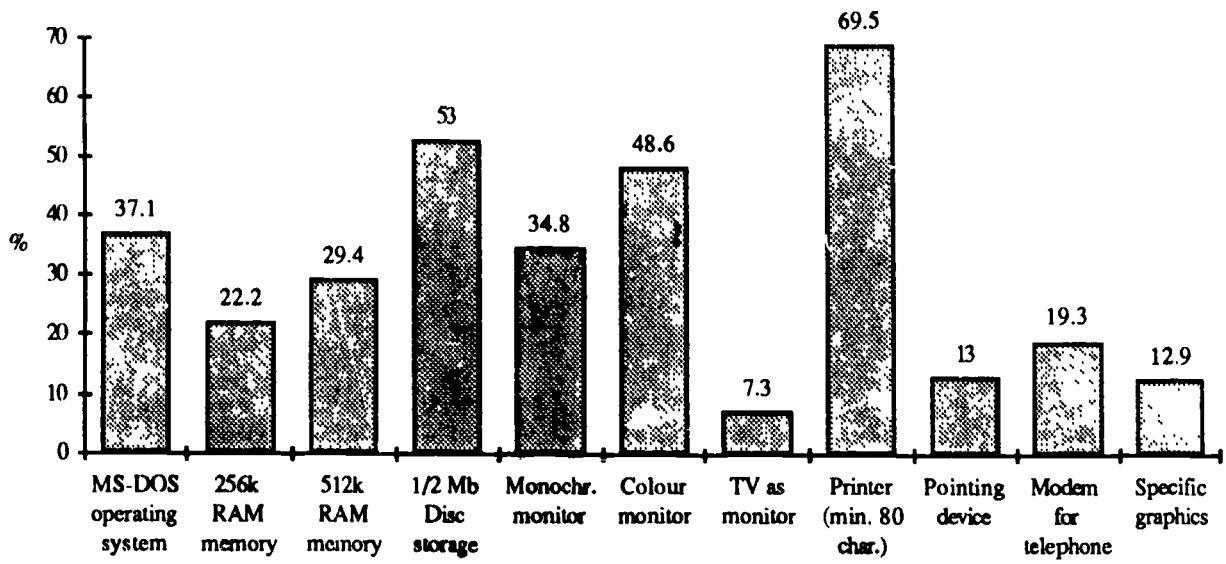
The following two figures show features of the micro systems to which students have access in terms of the location of most convenient access. Figure 21 shows the percentage of students with home access that have specified equipment. Figure 22 shows the corresponding data for students with access at work or in some other location.

Figure 21. Features of the micro system to which students have access at home.
(Base: Students with home access to micro equipment)



Less than one-sixth of students with home access (15.6%) have equipment with the MS-DOS operating system. One third of this group (33.5%) have disc storage of at least $^{1}/_{2}$ Mb, while over half (51.3%) have a printer with at least 80 characters per line. More students in the group use their TV as a monitor than use a dedicated monitor - monochrome or colour (42.7%, 32.3% and 29.4% respectively). Further details appear in Table 9a in Appendix 1.

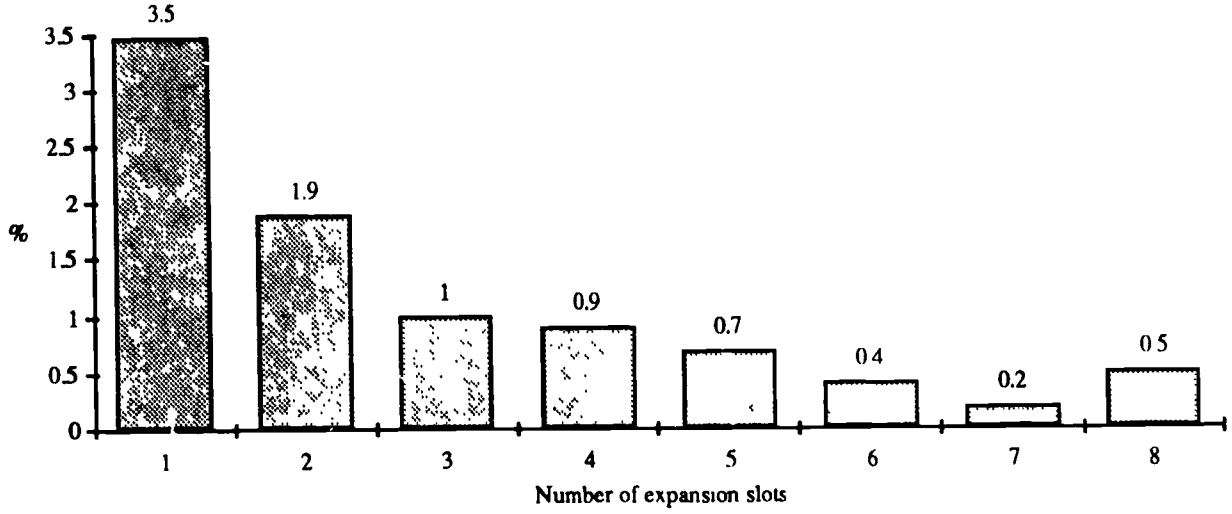
Figure 22. Features of the micro system to which students have access at work or elsewhere.
(Base: Students with access to micro equipment at work or in some other location)



Generally, the equipment to which students have access at work or elsewhere is of a higher specification than that used in the home. Well over a third of students have access to a micro at work/elsewhere with the MS-DOS operating system (37.1%) and over half (53%) have disc storage of at least $^{1}/_{2}$ Mb. A colour monitor is available to almost half the students in this group (48.6%) and over two-thirds (69.5%) have access to a suitable printer. More details appear in Table 9a in Appendix 1.

We asked students to indicate the number of **expansion slots** there were in the microcomputer to which they had access. The overall responses are shown in Figure 23.

Figure 23. Number of expansion slots in micro system to which students have access.
(Base: All survey respondents)



7. EXPERIENCE OF USING MICROCOMPUTING EQUIPMENT

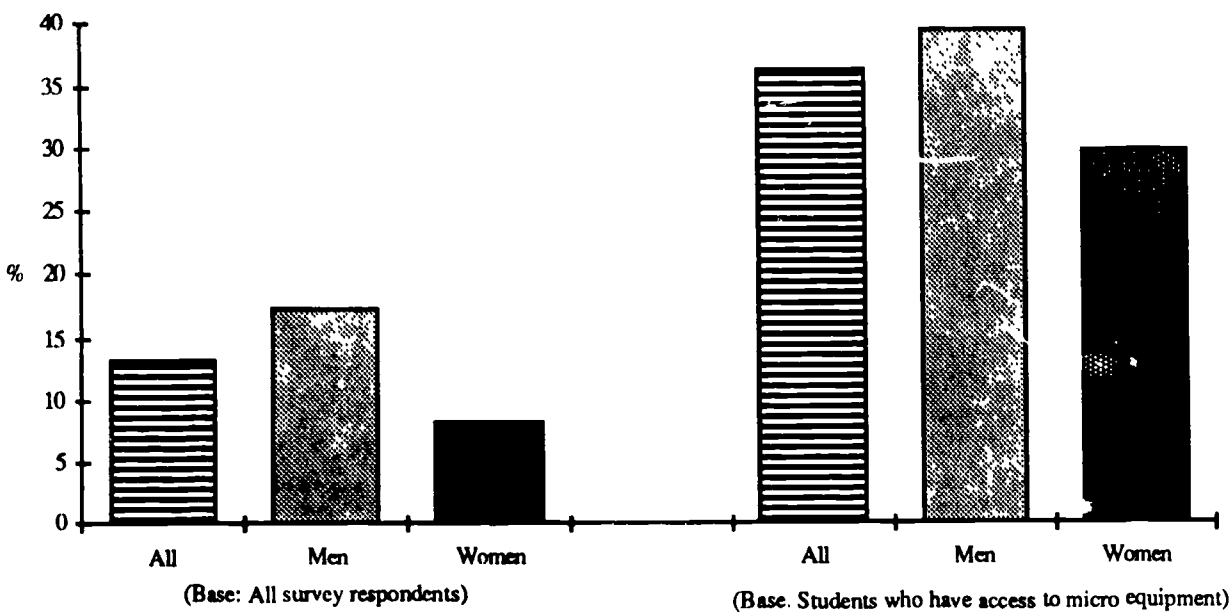
A series of questions was asked of all students in order to find out about their experience of using microcomputing equipment both for OU study purposes and for work or other purposes.

(i) Use of microcomputing equipment for OU work

Our interest in students' use of micro equipment for OU study purposes embraced a notion of computer usage that was much wider than that associated with the University's Home Computing Policy. We asked students to indicate whether they had already used micro equipment for their OU work and, if so, (a) how it had been used, and (b) for how long.

Overall, more than a third (36.3%) of students who had access to micro equipment reported already having used a micro in their OU work. This represents a little over one eighth (13.2%) of all survey respondents. Numerically, well over t .ce as many men as women have already used micro equipment in their OU studies (we have seen, in Table 1, that twice as many men as women have access of some kind to micro equipment). Figure 24 shows the proportions of all respondents and of those with access to micro equipment who have used a micro in their OU studies - the data is presented in Tables 10a and 10b in Appendix 1.

Figure 24. Students who have already used micro equipment for their O.U. work.

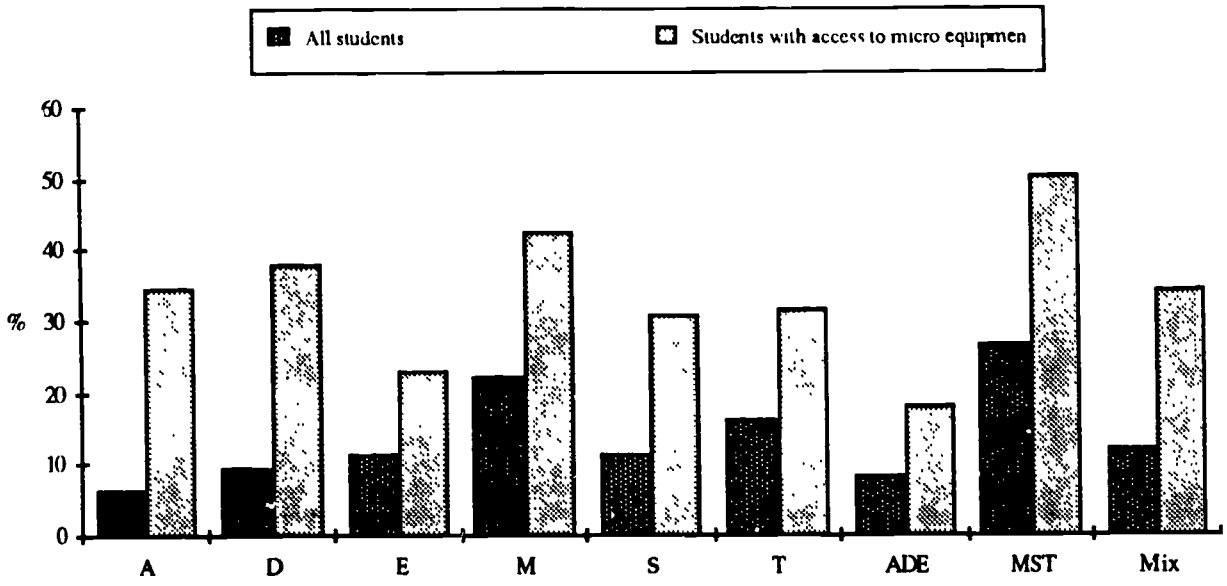


As might be expected, students taking courses in Mathematics, Technology and Maths/Science/Technology were more likely than others to have already made use of micros in their studies (M = 22.2%, T = 16.4% and MST = 27% of total survey respondents). However, 6.5% of those taking mainly Arts courses (the group least likely to have used micro equipment during their studies) indicated that they had done so.

When considered in terms of those who reported having access to micro equipment, the proportion of students taking mainly Arts or Social Science courses who had used a micro in their studies was greater than the corresponding Science and Technology students, but still less than the Mathematics or Maths/Science/Technology students.

These patterns of response by course profile are shown in Figure 25, with details of the data in Tables 10c and 10d in Appendix 1.

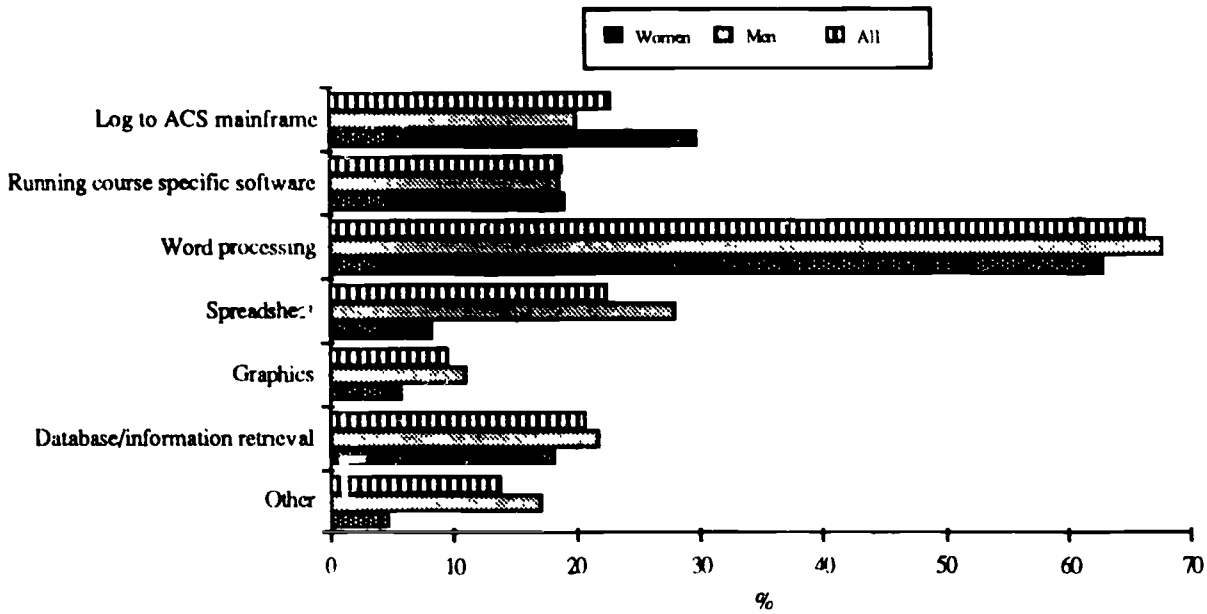
Figure 25. Micro equipment has already been used for O.U. work - by course profile.



(a) How micro equipment had been used by OU students

Information was sought from students on **how** they had used micro equipment in their studies, for example as a terminal to log into the ACS mainframe, to run course-specific software or using general purpose software for word processing, etc. The overall pattern of responses is shown in Figure 26. Greater detail appears in Table 11 in Appendix 1.

Figure 26. How micro equipment has been used for O.U. work.
(Base: Students who have used micro equipment for O.U. work)



Log into ACS mainframe: Almost a quarter (22.9%) of students who had used their equipment for OU study purposes had operated the micro as a terminal to log into the ACS mainframe. A higher proportion of women than men had done so (30% compared with 20.2%), although numerically more men had used their micro in this way. These students were mainly studying Science, Mathematics, Technology or Maths/Science/Technology courses (S = 41.9%, M = 36.9%, T = 28.5% and MST = 29.7%).

Running course-specific software: Less than a fifth of those who had used a micro in their OU studies (18.9%) had operated the equipment to run course-specific software. Similar proportions of male and female students had run their equipment in this way. Those working 'in education' were the most likely to do so, with 42.6% having used this facility.

Students taking courses in Mathematics, Technology and Maths/ Science/Technology were more likely than others to run course-specific software (M = 26.9%, T = 25.5%, MST = 34.8%).

Word Processing: By far the greatest use of micro equipment in OU work has been for word processing. Almost two-thirds of those who had used a micro in their studies (66.3%) had utilised word processing software. The proportions of female and male students in this category was almost equivalent (62.8% and 67.6% respectively), although nearly 3 times as many men as women had already used micro equipment in their OU work.

Where micro computing equipment had been used by students taking mainly Social Science, Arts and Education courses, it tended to be utilised for word processing (D = 100%, A = 85.5%, E = 100%). Students taking mainly Mathematics or Science courses were least likely to use

their equipment for word processing, but the proportion doing so still exceeds two-fifths of the total for each group (M = 40.5%, S = 47.9%).

Spreadsheet: Over a fifth (22.6%) of those who had used a micro for OU study purposes had utilised general purpose spreadsheet software. Far more men than women had done so (27% compared with 8.3%). Students working 'in education' were less likely than others to have used this facility.

Those taking courses in Technology, Social Sciences, Mathematics and Science were more likely than others to have used spreadsheet software (T = 29.7%, D = 26.8%, M = 25.7%, S = 23.5%).

Database/Information Retrieval: A fifth (20.8%) of those with experience of using a micro for OU study purposes had run general purpose database/information retrieval software. A larger proportion of men than women had done so (21.8% compared with 18.2%).

In terms of course profiles, the highest usage was among the small group of students taking mainly Education courses, where over half (51%) had used software for this purpose. Usage was also high among students taking Technology, Social Sciences and Mathematics courses (T = 33.8%, D = 27.6%, M = 22.7%).

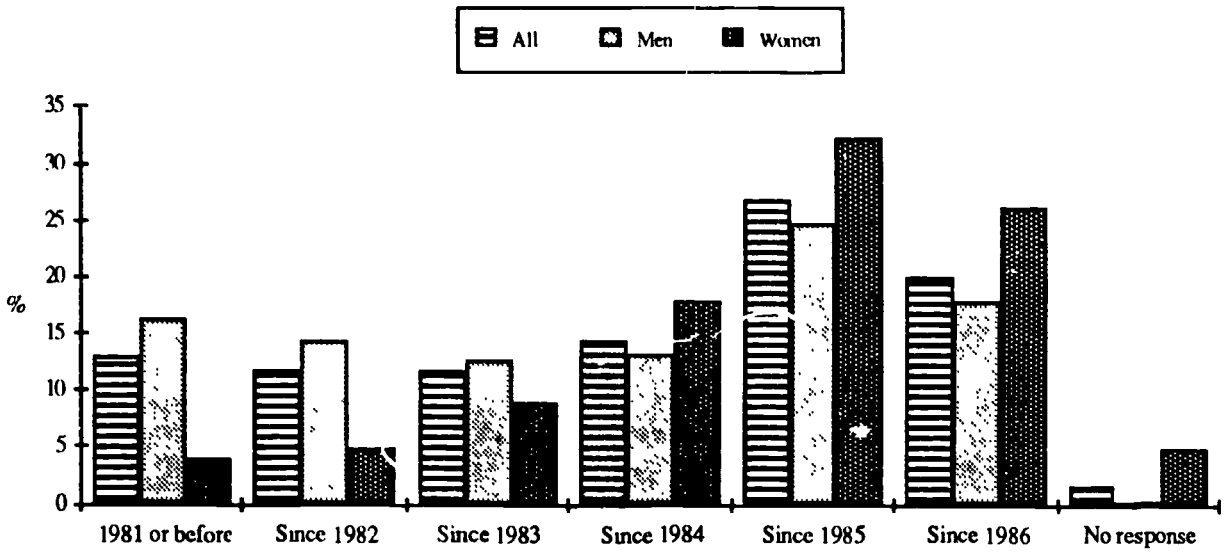
Graphics: General purpose graphics software had been utilised by less than a tenth of those who had already used micro equipment in their OU studies (9.6%). The proportion of male students was almost twice as large as that for female students (11.1% compared with 5.8%).

Students taking Technology, Science, Maths/Science/Technology or a general mix of courses were the most likely to make use of graphics software (T = 18.3%, S = 12.7%, MST = 13.1%, Mix = 16%).

(b) For how long have students been using microcomputing equipment?

Students were asked to report how long they had been using micro equipment - the overall responses are shown in Figure 27, with further details in Table 12a in Appendix 1.

Figure 27. For how long micro equipment has been used
(Base: Students who have used micro equipment for O U. work)



Just over an eighth (13.1%) of students who had used a micro for OU work had been utilising such equipment for more than 5 years, i.e. since 1981 or before. There was a large growth in utilisation in 1985 (26.9%), while a fifth (20.2%) of micro users were gaining their first experience in 1986.

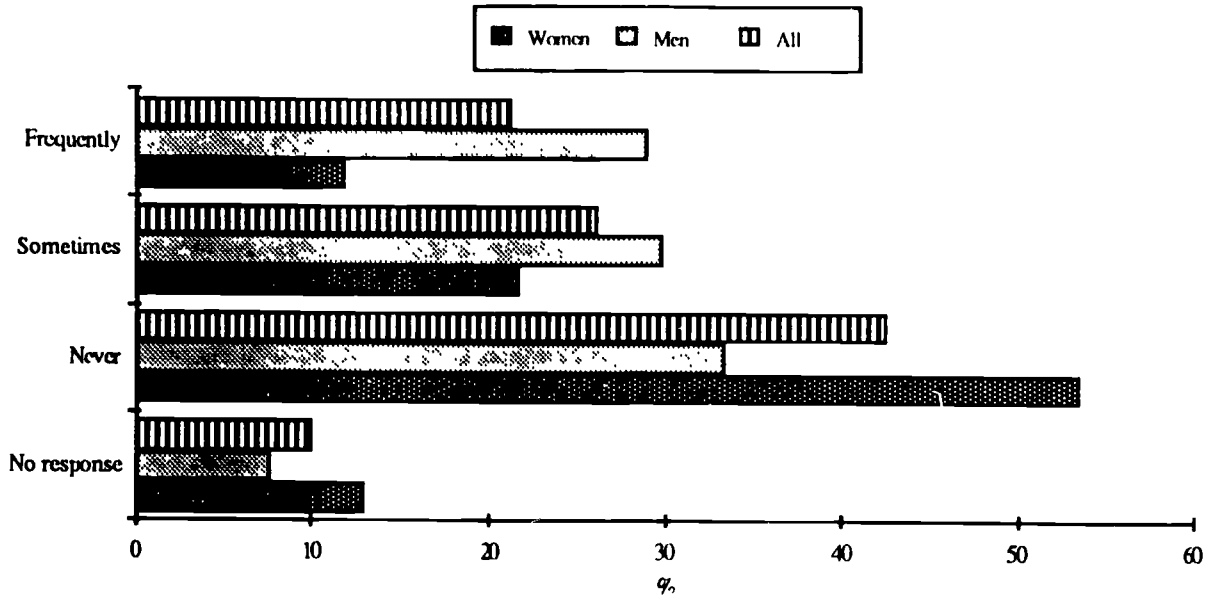
Before 1982 it was mainly men who had used microcomputing equipment. However, there has been a marked change over time, with a dramatic rise since 1984 in the proportion of female students using micros. (However, it must be remembered that far fewer women than men are using micros in their OU studies - see Figure 24 on page 21).

Use of micro equipment before 1983 was mainly by students taking Technology, Mathematics, Science or Maths/Science/Technology courses. Only in recent years has greater use been made by students taking courses in Social Sciences, Arts and Education. Table 12b in Appendix 1 presents further details.

ii) Use of Computers in Normal Work Situation

We wished to ascertain the extent to which students made use of computers in their normal work situation, in order to learn more about students' experience of and familiarity with computing facilities. The overall responses are shown in Figure 28: the data appears in Table 13a in Appendix 1.

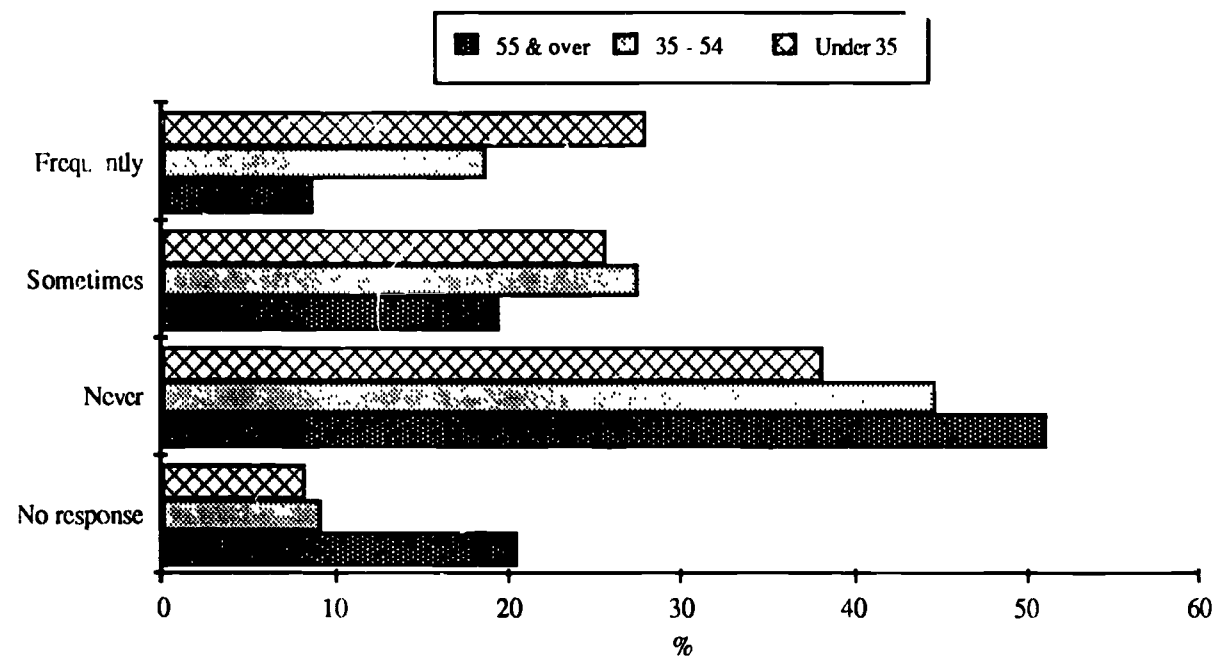
Figure 28. Use of computers in normal work situation.
(Base: All survey respondents)



Almost a half of all survey respondents report making some use of computing facilities in their normal work situation (Frequently = 21.2%, Sometimes = 26.1%).

Men are much more likely than women to use computers at work - Negative responses were made by over half the women (53.5%) compared with only one third of the men (33.4%). Younger students are more likely than others to make use of computers at work, as shown in Figure 29.

Figure 29. Use of computers in normal work situation - by age.
(Base: All survey respondents)



Some regional differences can be found in the use of computers at students' normal place of work (the data is shown in Table 13c in Appendix 1). Frequent use of computers is highest in Yorkshire and the South - Regions 07 and 02 - (30.2% and 27.8% respectively) - and lowest in Northern Ireland (9.0%), West Midlands (16.3%), South East (16.5%) and the South West (16.9%) - Regions 12, 04, 13 and 03.

Overall familiarity with the use of computers at work, i.e. used 'frequently' or 'sometimes', is highest in East Anglia, Yorkshire and Scotland (Regions 06, 07 and 11) and is lowest in Northern Ireland and the South West (Regions 12 and 03).

When considered in relation to the profile of courses taken (or planned to be taken) by students, it is those who study mainly Mathematics, Technology or Maths/Science/Technology courses that are most likely to make frequent use of computers at work (M = 35.9%, T = 34%, MST = 29.5%). However, around 12% of Arts and Social Science students report making frequent use of computers (A = 11.9% and D = 12.4%).

About half of the students taking courses mainly in Arts, Social Science and Arts/Social Sciences/Education report **not** using computers in their normal work situation (A = 49.6%, D = 52.0%, ADE = 59.0%). The corresponding proportion of students taking mainly Mathematics or Technology courses is between a quarter and a third (M = 29.5%, T = 27.8%). More details appear in Table 13b in Appendix 1.

8. THE EFFECT OF THE HOME COMPUTING POLICY ON STUDENTS' STUDY PLANS

We wanted to get some impression of the effects of the university introducing a Home Computing Policy upon students' plans for future studies. In particular, we sought to find out if the cost of obtaining or renting appropriate equipment would deter some students from studying courses that would come under a Home Computing Policy.

Framing such a question was frought with many difficulties, not least the fact that it refers to future intentions. We were well aware that students' plans for future studies are likely to change for a wide range of reasons; academic and personal as well as financial. Other problems in devising the question at the time included:

(i) No agreed and published list of the equipment to be specified under a Home Computing Policy;

(ii) No indication of the cost of purchasing/renting the specified equipment;

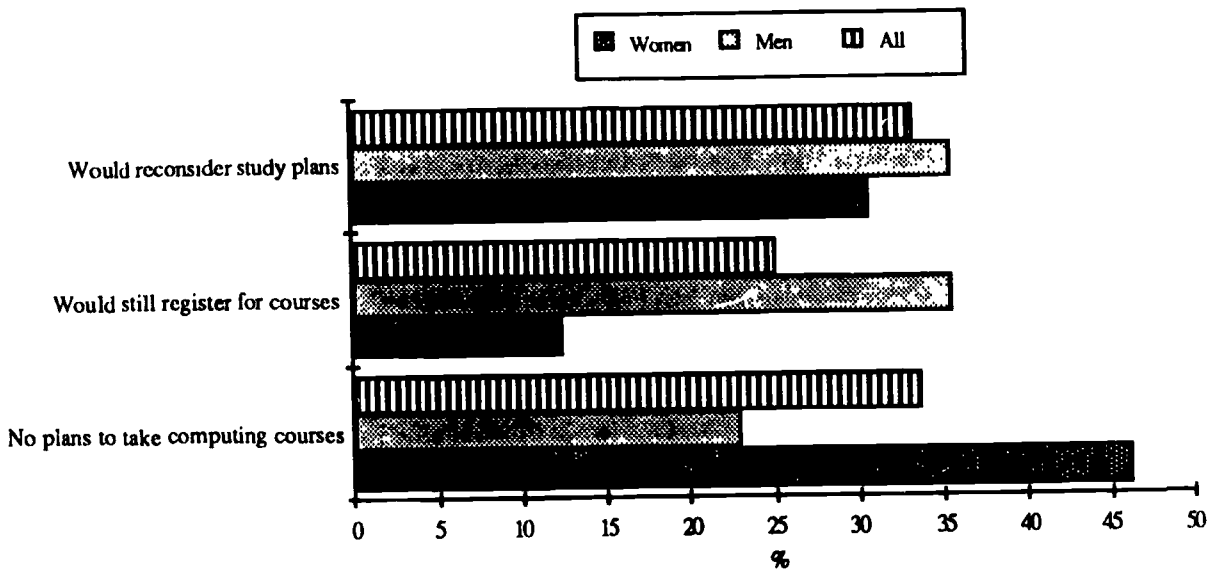
(iii) No precise list of the courses likely to be included under the policy.

As the survey questionnaire was sent to a general sample of OU undergraduate students, it was likely that a large proportion would not be considering taking courses involving an element of computing. Thus the question (see Question 27 in Appendix 2) asked students to make one of these responses:-

> "Yes, I would reconsider my plans",
> "No, I would still register for such courses",
> "I do not plan to study courses with a computing element".

The overall responses are shown in Figure 30, with further details of the data in Table 14a in Appendix 1.

Figure 30. Effect of Home Computing Policy on study plans.
(Base: All survey respondents)



A third of students (33.3%) indicated that they would reconsider their study plans in the light of the Home Computing Policy. A quarter of the respondents (25.1%) felt that their plans to study courses with a possible computing element would not be changed, while a third of the total (33.6%) declared that they had no plans to study such courses.

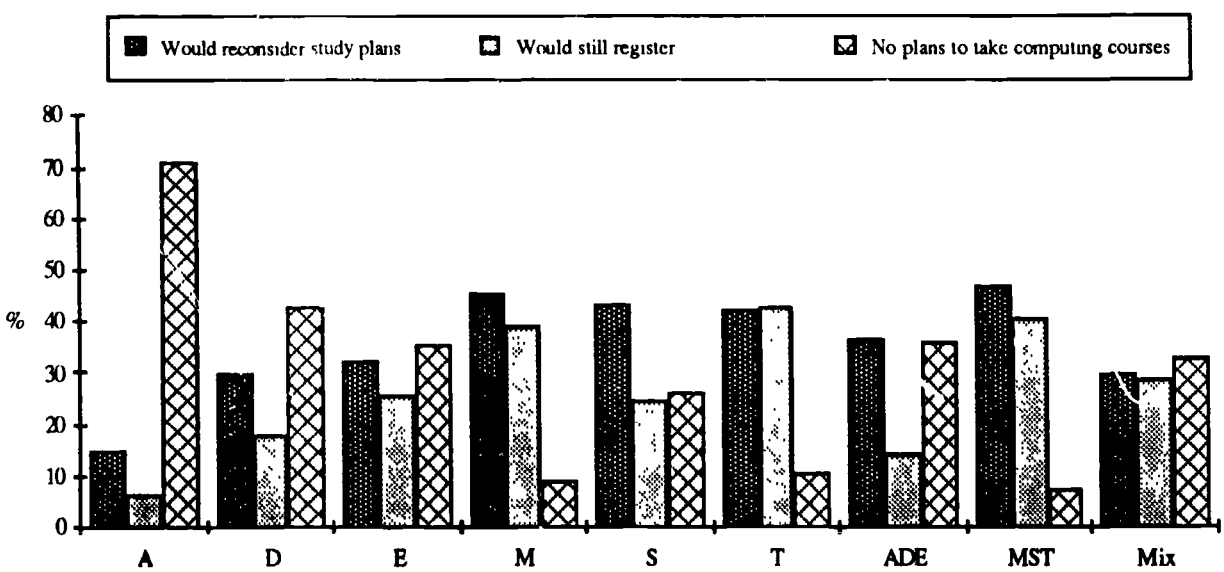
A slightly greater proportion of men than women indicated that they would reconsider their study plans (35.5% compared with 30.7%). Continuing students were more likely to do so than new students (34.7% compared with 29.2%). Younger students, i.e. those aged under 35, were more likely than others to reconsider their study plans (42.2%), as were those in blue collar occupations (44.7%).

Students may have indicated that the university's Home Computing Policy would make them reconsider their study plans for a variety of reasons. Some may consider that the cost of buying or renting appropriate equipment would be too great a burden to bear on top of all the other costs of studying. Others may already own micro equipment that does not fit the university's specification and would be unwilling to meet the expense of changing their facilities.

Of the students stating that they had no plans to study courses with a computing element, the proportion of female students was twice as great as the proportion of males (46.2% compared with 23.0%). More than half the students aged 55 and over (52.5%) were within this category, as were nearly two-fifths (39.6%) of students working 'in education'.

Figure 31 shows the responses in terms of students' stated course profile:-

Figure 31. Effect of Home Computing Policy on study plans - by course profile.
(Base: All survey respondents)



Students taking courses mainly in Mathematics, Technology or Maths/Science/ Technology are the ones most likely to register for courses that would come under the Home Computing Policy. In each of these groups over two-fifths of students indicate that they may reconsider their study plans (M = 45.7%, T = 42.6%, MST = 47.0%). However, almost as many (marginally more in Technology) report that they would still register for courses with a computing element (M = 39.5%, T = 43.0%, MST = 41.0%)

REFERENCES

Grundin, H. U. (1985)
Report on the 1984 Audio-Visual Media Survey
IET Paper

Office of Population Censuses and Surveys (1986)
General Household Survey - Preliminary Results for 1985
London: OPCS

APPENDIX 1

Tables of Data

TABLE 1

Access to a Microcomputer for Study Purposes (%)

(Base: All survey respondents)

	All	SEX		O.U. STATUS		OCCUPATION		
		Male	Female	New	Cont.	In Educ.	Other white collar	Blue collar
At home	18.4	23.6	12.2	17.3	18.8	18.6	19.9	16.3
At work	12.9	15.4	10.0	10.3	13.6	33.9	14.5	9.2
Elsewhere	1.7	1.7	1.6	1.7	1.6	.9	1.3	1.3
No access	60.2	53.2	68.4	61.7	59.6	39.3	58.4	67.6
No response	6.8	6.2	7.8	9.0	6.3	7.2	5.9	5.6
% of Total	100	54.3	45.7	21.8	77.8	14.1	48.9	8.8

TABLE 2

Access to a Microcomputer by Household Income (%)

(Base: All survey respondents)

	All	Under £4,160	£4,160 - £5,200	£5,200 - £8,320	£8,320 - £10,400	£10,400 - £18,200	Over £18,200
At home	18.4	10.5	21.8	15.9	13.1	20.8	21.8
At work	12.9	.0	.8	5.0	13.6	15.3	19.2
Elsewhere	1.7	4.1	.0	.6	1.9	1.6	1.6
Total access	33.0	14.6	22.6	21.5	28.6	37.7	42.6
No access	60.2	73.5	73.1	70.4	64.9	55.5	52.2
No response	6.8	11.9	4.3	8.1	6.5	6.8	5.2
% of Total	100	5.6	3.2*	12.1	14.4	44.8	17.4

* Small base for percentages

TABLE 3

Access to a Microcomputer for study purposes - by O.U. Region (%)

(Base: All survey respondents)

	All	01 London	02 South	03 South West	04 West Midlands	05 East Midlands	06 East Anglia
At home	18.4	17.0	20.3	15.6	16.1	14.8	22.4
At work	12.9	11.0	12.4	11.0	13.0	11.6	15.5
Elsewhere	1.7	1.1	1.8	2.3	1.1	3.9	1.4
No access	60.2	64.8	60.8	67.3	62.4	61.4	52.1
No response	6.8	6.1	4.7	3.8	7.3	8.3	8.7
% of Total	**100**	**10.2**	**9.3**	**8.3**	**7.8**	**6.6**	**10.0**

	07 Yorks	08 North West	09 North	10 Wales	11 Scot-land	12 North'n Ireland	13 South East
At home	17.0	18.0	16.0	22.1	18.7	23.3	20.3
At work	12.2	18.8	7.5	20.3	8.1	11.6	15.0
Elsewhere	2.5	2.1	3.6	0.7	0.8	0	0.3
No access	61.0	53.2	67.9	51.4	63.2	48.7	60.9
No response	7.3	7.9	5.0	5.5	9.3	16.5	3.6
% of Total	**7.5**	**10.3**	**4.5**	**3.3***	**10.0**	**2.3***	**8.8**

* Small base for percentages

TABLE 4

Access to a microcomputer for study purposes - by course profile (%)

(Base: All survey respondents)

	All	mainly A	mainly D	mainly E	mainly M	mainly S	mainly T	ADE	MST	A general mix
At home	18.4	10.9	13.8	11.5	23.5	16.5	29.5	8.5	31.9	16.6
At work	12.9	5.6	6.4	34.2	24.3	16.4	17.1	6.1	14.7	13.2
Elsewhere	1.7	1.2	2.6	0.8	0.8	2.2	0.8	0	2.1	2.7
No Access	60.2	73.8	72.2	48.4	45.3	59.6	46.8	67.9	46.2	61.1
No response	6.8	8.4	5.0	5.2	6.2	5.3	5.7	17.5	5.2	6.4
% of Total	**100**	**22.0**	**16.3**	**3.1***	**10.2**	**12.4**	**14.1**	**2.8***	**8.3**	**9.5**

* Small base for percentages

TABLE 5a

How microcomputing equipment is set up in students' homes (%)

(Base: Students with home access to micro equipment)

	All	Sex		Occupation Category		
		M	F	In education	Other white collar	Blue collar
Permanently	59.4	60.4	57.0	58.4	60.4	55.9
Semi-Permanently	16.9	15.1	21.0	24.5	17.4	14.0
Only as and when needed	23.3	23.8	22.0	17.1	21.4	30.2
No response	0.5	0.7	0	0	0.9	0
% of Total	**18.4***	**69.6**	**30.4**	**14.2**	**52.8**	**7.8****

TABLE 5b

Where microcomputing equipment is set up in students' homes (%)

(Base: Students with home access to micro equipment)

	All	Sex		Occupation Category		
		M	F	In education	Other white collar	Blue collar
In a quiet 'private' area	66.9	69.0	62.2	64.5	67.5	68.7
In a 'public' part of house	32.6	30.3	37.8	35.5	31.6	31.3
No response	0.5	0.7	0	0	0.9	0
% of Total	**18.4***	**69.6**	**30.4**	**14.2**	**52.8**	**7.8****

* of total respondents
** small base for percentages

TABLE 5c

How and where microcomputing equipment is set up in students' homes - by course profile (%)
(Base: Students with home access to micro equipment)

	All	mainly A	mainly D	mainly E	mainly M	mainly S	mainly T	ADE	MST	A general mix
Permanently	59.4	67.6	61 1	77.2	68.5	51.2	52.0	68.6	59.6	57.3
Semi-permanently	16.9	17.8	24 4	22.8	8.5	15.0	16.3	10.6	22.0	10.3
Only as and when needed	23.3	10.9	14.5	0	23.0	33.8	31.7	20.8	18.4	32.4
No response	0.5	3.7	0	0	0	0	0	0	0	0
In a quiet 'private' area	66.9	68.8	69.5	29.8	75.0	48.4	64.6	41.6	77.9	66.1
In a 'pub! . part of house	32.6	27.6	30.5	70.2	25.0	51.6	35.4	58.4	22.1	33.9
No response	0.5	3.7	0	0	0	0	0	0	0	0
% of Total	**18.4***	**13.1**	**12.2**	**2.0****	**13.1**	**11.1**	**22.6**	**1.3****	**14.3**	**8.6****

* of total respondents
** small base for percentages

TABLE 5d

Does the location of the microcomputer have convenient access to a telephone point? (%)
(Base: Students with home access to micro equipment)

	All	Sex		Occupation Category		
		M	F	In education	Other white collar	Blue collar
Yes	45.2	47.7	39.5	49.1	44.1	49.7
No	54.3	51.6	60.5	50.9	55.0	50.3
No response	0.5	0.7	0	0	0.9	0
% of Total	**18.4***	**69.6**	**30.4**	**14.2**	**52.8**	**7.8****

* of total survey respondents
** small base for percentages

TABLE 6

Any inconvenience caused by operation of micro equipment in students' homes (%)

(Base: Students with home access to micro equipment)

	All	Sex	
		Male	Female
Noise generated can disturb others	14.1	11.1	21.1
Need for quiet/lack of distractions	14.2	12.3	18.5
Monopolises space/ facilities	20.5	15.6	31.7
Other problems	2.6	3.3	0.9
No problems	54.4	61.2	38.7
% of Total	**18.4***	**69.6**	**30.4**

* of total respondents

TABLE 7a

Use of microcomputing equipment in the home by students' spouse (%)
(Base: Students with home access to micro equipment)

	All	Used by		Occupation Category		
		Husband	Wife	In education	Other white collar	Blue collar
Frequent	22.0	53.7	8.1	30.6	13.4	0
Infrequent	21.0	13.7	24.1	15.4	25.8	25.1
Almost never	35.8	17.8	43.7	39.7	38.3	37.4
No response	21.3	14.8	24.1	14.3	22.5	37.4
% of Total	**18.4***	**30.4**	**69.6**	**14.2**	**52.8**	**7.8****

TABLE 7b

Use of microcomputing equipment in the home by children (%)
(Base: Students with home access to micro equipment)

	All	Sex		Occupation Category		
		Men	Women	In education	Other white collar	Blue collar
Frequent	25.9	23.3	31.9	33.2	23.4	17.3
Infrequent	25.9	22.2	34.3	17.7	24.6	26.3
Almost never	13.5	15.7	8.6	10.8	12.6	15.6
No response	34.7	38.9	25.2	38.2	39.4	40.8
% of Total	**18.4***	**69.6**	**30.4**	**14.2**	**52.8**	**7.8****

* of total respondents
** small base for percentages

TABLE 7c

Use of microcomputing equipment by others in the house (%)

(Base: Students with home access to micro equipment)

	All	Sex		Occupation Category		
		Men	Women	In education	Other white collar	Blue collar
Frequent	1.2	1.1	1.5	0	1.1	6.1
Infrequent	3.0	3.0	2.9	0.9	3.8	3.4
Almost never	18.3	22.4	8.9	11.5	17.0	27.9
No response	77.5	73.5	86.7	87.6	78.2	62.6
% of Total	**18.4***	**69.6**	**30.4**	**14.2**	**52.8**	**7.8****

* of total respondents
** small base for percentages

TABLE 8

Access to microcomputing equipment at work or elsewhere - extent of control over use (%)

(Base: Students with access to micro equipment at work or in another location)

	All	Sex		Occupation Category		
		Men	Women	In education	Other white collar	Blue collar
Sole user	11.7	13.8	8.0	5.1	16.5	19.1
Shared with 1 or 2 others	22.0	26.2	14.6	8.8	32.3	29.6
Shared with many others	43.7	41.6	47.4	63.1	34.9	39.1
Special access only	11.7	10.5	13.8	7.3	11.5	2.6
No response	10.9	7.8	16.3	15.7	4.8	9.6
% of Total	**14.6***	**63.5**	**36.5**	**33.6**	**53.1**	**6.3****

* of total respondents
** small base for percentages

TABLE 9a

Features of microcomputing equipment to which students have access (%)

	All	Sex		Access at home	Access at work/elsewhere
		Men	Women		
MS-DOS operating system	8.4	11.2	5.1	15.6	37.1
256K RAM memory	6.8	7.9	5.5	16.8	22.2
512K RAM memory	7.0	9.3	4.2	12.6	29.4
1/2 Mb Disc storage	14.9	19.7	9.3	33.5	53.0
Monochrome monitor	12.0	15.4	7.9	32.3	34.8
Colour monitor	13.2	16.4	9.3	29.4	48.6
TV as monitor	9.8	10.7	8.7	42.7	7.3
Printer (min 80 char.)	21.0	26.5	14.5	51.3	69.5
Pointing device	3.7	4.7	2.5	9.2	13.0
Modem for telephone	5.4	7.3	3.2	11.9	19.3
Specific graphics	3.4	5.0	1.6	8.2	12.9
% of Total	**100**	**54.3**	**45.7**	**18.4**	**14.6**
	(Base: All survey respondents)			(Base: Students with home access)	(Base: Students with access at work elsewhere)

TABLE 9b

Features of microcomputing equipment to which students have access - by course profile (%)
(Base: All survey respondents)

	mainly A	mainly D	mainly E	mainly M	mainly S	mainly T	ADE	MST	A general mix
MS-DOS operating system	4.6	4.9	6.2	15.4	8.4	14.2	0	15.1	5.6
256K RAM memory	1.7	6.3	16.4	12.0	4.2	6.8	8.7	12.2	7.7
512K RAM memory	4.6	4.3	2.6	11.8	6.9	10.2	0	10.9	7.2
1/2 Mb Disc storage	7.6	7.2	18.0	26.0	18.2	19.9	7.6	29.4	11.4
Monochrome monitor	4.6	9.1	6.1	20.7	13.5	19.0	0.9	20.3	11.8
Colour monitor	6.7	9.2	23.5	21.0	14.7	15.6	14.5	17.4	12.0
TV as monitor	4.9	6.6	6.8	10.1	9.9	15.9	11.7	14.8	12.1
Printer (min 80 char.)	10.5	15.9	19.3	37.7	21.7	28.0	11.7	33.3	18.9
Pointing device	1.3	3.4	5.0	4.2	4.6	4.5	0	6.3	5.4
Modem for telephone	2.2	1.8	6.9	13.4	6.9	7.7	1.8	8 6	3.8
Specific graphics	2.3	1.2	0	4.0	5.9	6.5	0	2.7	3.6
% of Total	**22.0**	**16.3**	**3.1***	**10.2**	**12.4**	**14.1**	**2.8***	**8.3**	**9.5**

* small base for percentages

TABLE 10a

Microcomputing equipment has already been used for OU work (%)
(Base: All survey respondents)

	All	Sex		Occupation Category			Age		
		M	F	In education	Other white collar	Blue collar	Under 35	35-54	55 and over
Yes	13.2	17.3	8.3	17.2	14.7	15.0	14.4	12.8	9.7
No	22.5	26.5	18.9	41.8	23.2	13.2	23.5	24.0	12.7
No response	64.3	57.1	72.9	41.0	62.1	71.9	62.1	63.2	77.6
% of Total	**100**	**54.3**	**45.7**	**14.1**	**48.9**	**8.8**	**37.0**	**51.5**	**9.1**

TABLE 10b

Microcomputing equipment has already been used for OU work (%)
(Base: Students with access to micro equipment)

	All	Sex		Occupation Category		
		Men	Women	In education	Other white collar	Blue collar
Yes	36.3	39.5	29.8	27.7	38.6	51.0
No	58.6	55.4	65.1	67.1	55.9	43.2
No response	5.1	5.1	5.1	5.1	5.5	5.8
% of Total	**33.0***	**66.9**	**33.1**	**22.8**	**52.9**	**7.2****

* of total respondents
** small base for percentages

TABLE 10c

Microcomputing equipment has already been used for OU work - by course profile (%)
(Base: All survey respondents)

	All	mainly A	mainly D	mainly E	mainly M	mainly S	mainly T	ADE	MST	A general mix
Yes	13.2	6 5	9.7	11.5	22.2	11.5	16.4	8.5	27.0	12.3
No	22.5	13.5	16.5	35.7	27.9	25.9	33.0	14.8	25.5	22.6
No response	64.3	80 0	73.8	52.8	49.9	62.6	50.6	76.7	47.6	65.1
% of Total	**100**	**22.0**	**16.3**	**3.1****	**10.2**	**12.4**	**14.1**	**2.8****	**8.3**	**9.5**

TABLE 10d

Microcomputing equipment has already been used for OU work - by course profile (%)
(Base: Students with access to micro equipment)

	All	mainly A	mainly D	mainly E	mainly M	mainly S	mainly T	ADE	MST	A general mix
Yes	36.3	34.6	37.9	23.1	42.5	30.9	31.6	18.3	50.5	34.5
No	58.6	59.7	56.8	73.5	53.0	61.5	63.7	60.0	49.5	58.4
No response	5.1	5.7	5.3	3.5	4.6	7.6	4.7	21.7	0	7.1
% of Total	**33.0***	**11.8**	**11.3**	**4.4****	**15.1**	**13.2**	**20.3**	**1.2****	**12.2**	**9.4**

* of total respondents
** small base for percentages

TABLE 11a

How microcomputing equipment has been used for OU work (%)

(Base: Students who have used micro equipment for OU work)

	All	Sex		Occupation Category		
		Men	Women	In education	Other white collar	Blue collar
Log to ACS mainframe	22.9	20.2	30.0	43.2	16.8	24.0
Running course-specific software	18.9	18.8	19.2	42.6	13.4	16.7
Word processing	66.3	67.6	62.8	56.8	73.0	50.0
Spreadsheet	22.6	27.9	8.3	16.7	26.4	29.3
Graphics	9.6	11.1	5.8	4.2	11.6	7.3
Database/ info. retrieval	20.8	21.8	18.2	16.3	19.3	29.3
Other	13.8	17.2	4.8	4.2	15.9	16.7
% of Total	**13.2***	**72.8**	**27.2**	**17.4**	**56.3**	**10.1**

* of total respondents

TABLE 11b

How microcomputing equipment has been used for OU work - by course profile (%)

(Base: Students who have used micro equipment for OU study purposes)

NB This base represents only 13.2% of total survey respondents, so some faculty percentages are based upon very small numbers of students.

	All	mainly A	mainly D	mainly E	mainly M	mainly S	mainly T	ADE	MST	A general mix
Log to ACS mainframe	22.9	3.8	5.8	0	36.9	41.9	28.5	0	17.1	29.7
Running course-specific software	18.9	0	0	0	26.9	13.2	25.5	0	34.8	21.3
Word processing	66.3	85.5	100.0	100.0	40.5	47.9	66.2	66.2	69.7	61.0
Spreadsheet	22.6	6.6	26.8	26.5	25.7	23.5	29.7	0	15.5	24.3
Graphics	9.6	0	6.3	0	2.3	12.7	18.3	0	13.1	16.0
Database/ info. retrieval	20.8	1.9	27.6	51.0	22.7	13.2	33.8	33.8	11.1	18.3
Other	13.8	10.3	5.3	0	13.7	13.6	22.9	0	24.3	9.9
% of Total	**13.2***	**11.3**	**11.8**	**2.8**	**17.6**	**11.2**	**17.7**	**0.6**	**17.0**	**8.9**

* of total respondents

TABLE 12a

For how long microcomputing equipment has been used (%)

(Base: Students who have used micro equipment for OU work)

	All	Sex		Occupation Category		
		Men	Women	In education	Other white collar	Blue collar
Since 1981 or before	13.1	16.4	4.1	8.2	17.3	7.3
Since 1982	11.9	14.4	5.0	8.2	12.9	24.0
Since 1983	11.8	12.8	9.1	23.5	7.9	14.7
Since 1984	14.5	13.2	18.0	15.9	14.3	11.3
Since 1985	26.9	24.8	32.5	17.2	30.9	24.0
Since 1986	20.2	18.0	26.2	23.0	16.6	16.7
No response	1.6	0.3	5.0	3.9	0	2.0
% of Total	**13.2***	**72.8**	**27.2**	**17.4**	**56.3**	**10.1**

* of total respondents

TABLE 12b

For how long microcomputing equipment has been used - by course profile (%)
(Base: Students who have used micro equipment for OU work)

NB This base represents only 13.2% of total survey respondents, so some faculty percentages are based upon very small numbers of students.

	All	mainly A	mainly D	mainly E	mainly M	mainly S	mainly T	ADE	MST	A general mix
Since 1981 or before	13.1	0	9.7	26.5	11.9	32.5	24.3	0	4.4	2.4
Since 1982	11.9	0	0	0	11.8	9.7	23.2	0	22.7	8.3
Since 1983	11.8	6.6	0	0	18.0	18.7	10.6	0	8.9	24.9
Since 1984	14.5	20.6	23.1	24.5	14.5	8.0	15.2	0	13.1	4.6
Since 1985	26.9	33.0	40.1	49.0	14.6	14.1	17.9	0	27.0	50.3
Since 1986	20.2	39.8	21.4	0	25.3	16.9	8.8	100.0	23.9	7.1
No response	1.6	0	5.8	0	3.9	0	0	0	0	2.3
% of Total	**13.2***	**11.3**	**11.8**	**2.8**	**17.6**	**11.2**	**17.7**	**0.6**	**17.0**	**8.9**

* of total respondents

TABLE 13a

Use of computers in normal work situation (%)
(Base: All survey respondents)

	All	Sex		Occupation Category			Age		
		M		In education	Other white collar	Blue collar	Under 35	35-54	55 and over
Frequently	21.2	29.0		16.7	32.9	17.8	27.9	18.7	8.8
Sometimes	26.1	29.8		39.2	29.2	27.1	25.6	27.5	19.4
Never	42.6	33.4		35.2	31.0	48.4	38.2	44.6	51.1
No response	10.1	7.7		8.8	6.9	6.7	8.3	9.3	20.6
% of Total	**100**	**54.3**		**14.1**	**48.9**	**8.8**	**37.0**	**51.5**	**9.1**

TABLE 13b

Use of computer in normal work situation
- by course profile (%)
(Base: All survey respondents)

	All	mainly A		mainly E	mainly M	mainly S	mainly T	ADE	MST	A general mix
Frequently	21.2	11.9		20.3	35 9	24 7	34 0	9.9	29.5	15.5
Sometimes	26.1	21.6		25.8	25.9	25.0	32.7	14.5	36.0	24.9
Never	42.6	49.6		36.9	29.5	45.2	27.8	59.0	30.5	50.5
No response	10.1	16.9		16.9	8.5	5.1	5.6	16.6	4.0	9.1
% of Total	**100**	**22.0**		**3.1***	**10.2**	**12.4**	**14.1**	**2.8***	**8.3**	**9.5**

* Small base for percentages

TABLE 13c

Use of computers in normal work situation
- by O.U. Region (%)

(Base: All survey respondents)

	All	01 London	02 South	03 South West	04 West Midlands	05 East Midlands	06 East Anglia
Frequently	21.2	21.4	27.8	16.9	16.3	18.4	23.0
Sometimes	26.1	26.5	19.7	23.1	26.8	25.6	33.1
Never	42.6	41.2	42.1	47.6	45.0	48.6	35.3
No response	10.1	11.0	10.5	12.3	11.9	7.5	8.4
% of Total	**100**	**10.2**	**9.3**	**8.3**	**7.8**	**6.6**	**10.0**

	07 Yorks	08 North West	09 North	10 Wales	11 Scot-land	12 North'n Ireland	13 South East
Frequently	30.2	23.1	24.1	20.4	18.0	9.0	16.5
Sometimes	23.5	22.6	23.2	28.0	33.0	28.6	26.5
Never	37.6	45.4	46.2	40.2	38.7	45.8	46.3
No response	8.7	8.9	6.4	11.5	10.3	16.5	10.7
% of Total	**7.5**	**10.3**	**4.5***	**3.3***	**10.0**	**2.3***	**8.8**

* Small base for percentages

TABLE 14a

Effect of Home Computing Policy on study plans (%)

(Base: All survey respondents)

	All	SEX		O.U. STATUS		AGE		
		Male	Female	New	Cont.	Under 35	35 - 54	55 & over
Would reconsider study plans	33.3	35.5	30.7	29.2	34.7	42.2	30.3	15.4
Would still register	25.1	35.6	12.5	28.8	24.2	29.4	24.4	13.9
No plans to take computing courses	33.6	23.0	46.2	32.8	33.7	22.7	37.8	52.5
No response	8.0	5.9	10.6	9.2	7.4	5.7	7.5	18.2
% of Total	100	54.3	45.7	21.8	77.8	37.0	51.5	9.1

	OCCUPATION CATEGORY			EMPLOYMENT STATUS			
	In education	Other white collar	Blue collar	Men emp.	Men not emp.	Women emp.	Women not emp.
Would reconsider study plans	32.8	34.4	44.7	37.0	26.5	32.9	28.9
Would still register	21.2	31.1	36.0	37.3	24.4	15.5	9.3
No plans to take computing course	39.6	29.9	13.6	21.1	35.9	44.5	47.5
No response	6.4	4.6	5.7	4.6	13.2	7.1	14.3
% of Total	14.1	48.9	8.8	47.1	7.0	24.3	21.0

TABLE 14b

Effect of Home Computing Policy on study plans - by course profile (%)

(Base: All Survey respondents)

	All	mainly A	mainly D	mainly E	mainly M	mainly S	mainly T	ADE	MST	A general mix
Would reconsider study plans	33.3	14.8	29.8	32.8	45.7	43.4	42.6	36.6	47.0	30.2
Would still register	25.1	6.5	18.2	25.7	39.5	24.7	43.0	14.3	41.0	29.0
No plans to take computing courses	33.6	71.3	43.1	35.8	9.2	26.2	10.7	36.3	7.8	33.1
No response	8.0	7.4	8.9	5.7	5.6	5.7	3.7	12.8	4.2	7.7
% of Total	100	22.0	16.3	3.1*	10.2	12.4	14.1	2.8*	8.3	9.5

* small base for percentages

APPENDIX 2

Relevant Questions from the 1986 Costs/Access Questionnaire

ACCESS TO EQUIPMENT FOR STUDY PURPOSES

The University has to develop policies concerning two new media that have great potential for distance learning, namely *video* and *the microcomputer*.

By *video*, we mean audio-visual material which is recorded on a video tape cassette, and which can then be played back on a video playback machine using the machine's stop-start facility as required.

By *microcomputer*, we mean a reasonably sophisticated microcomputer-based system, which can realistically be used for home study purposes. We do not mean the sort of equipment used in study-centre terminal rooms: those terminals can be used only when connected to the University's mainframe computer. Nor are we concerned with the cheaper, low-powered, games machines which you use with your domestic television, and which load in off-the-shelf games from a cassette player.

We are concerned with microcomputers with a fairly large built-in memory, with additional data storage capacity on disc, with facilities for use with a good quality monitor, printer, etc. You may have a microcomputer that has the potential to become such a system even if you do not personally own the extra peripheral equipment. It may be that you are already using such a set-up for study purposes (e.g. as a word-processor to prepare your TMAs) even if the courses you are doing do not specify the use of a computer.

We are as much concerned with your level of use of such equipment as with the type of machine. So, please will you take time to answer the questions whether or not you had access to such equipment during 1986, or indeed even if you are not "machine-minded".

Please answer the following questions about your access to equipment in 1986.

21. Do you have access to a microcomputer that you use for study purposes (if the OU provided appropriate software)? (N.B. Do not include access to an OU HECTOR micro.)
(If more than one alternative applies, mark the one most convenient for you to use.)

Yes, in my home	1	*(Go to Q22)*	(16)
Yes, at my place of work	2	*(Go to Q23)*	
Yes, in other location, namely _____	3	*(Go to Q23)*	
No	4	*(Go to Q26)*	

22. a) How is your micro equipment set up at home?

Permanently	1	(17)
Semi-permanently	2	
Only as and when needed	3	

b) When set up for use, is the equipment in

a quiet, 'private' area used for studying	1	(18)
a 'public' part of the house (e.g. living room)	2	

c) Does the location of the microcomputer have convenient access to a telephone point?

Yes	1	(19)
No	2	

d) Does the operation of the equipment cause inconvenience to other members of the household? *(Indicate any that apply)*

Noise generated by equipment can disturb others	1	(20)
Need for quiet/lack of distractions during operation can cause problems	1	(21)
Monopolises space/facilities that others may want to use	1	(22)
Other (please specify) _____	1	(23)
No problems	1	(24)

e) How much use do other members of your household make of the equipment?

	Frequent	Infrequent	Almost never	
Spouse	1	2	3	(25)
Children	1	2	3	(26)
Others in house	1	2	3	(27)

(Now go to Question 24)

23. How much control do you have over the use of the equipment?

Sole user	1	(28)
Shared with 1 or 2 others	2	
Shared with many others	3	
Access only for special purposes	4	

24. Does the system you can use include the following:

MS-DOS operating system	Yes	1	(29)
Memory - 256K RAM minimum	Yes	1	(30)
- 512K RAM minimum	Yes	1	(31)
Disc storage - 1/2 Mb minimum	Yes	1	(32)
Monochrome monitor	Yes	1	(33)
Colour monitor	Yes	1	(34)
TV as monitor	Yes	1	(35)
Printer (at least 80 characters per line)	Yes	1	(36)
Pointing device (e.g. mouse)	Yes	1	(37)
Modem for telephone communications	Yes	1	(38)
A specific graphics capability (e.g. CGA, EGA, Hercules, etc)	Yes	1	(39)
(Please specify _____)			
How many expansion slots? *(Please enter)*		[ ]	(40)

What make and model is it? *(Please write in)*

_____

25. Have you already used the equipment for Open University work? Yes 1 (41)
No 2

If YES,

a) Have you ever used this equipment in your studies: *(Indicate all that apply)*

- as a terminal to log into the ACS mainframe? Yes 1 (42)
- as a stand-alone micro running course-specific software (including programming exercises)? Yes 1 (43)
- using general purpose software for
  - a) word processing? Yes 1 (44)
  - b) spreadsheet? Yes 1 (45)
  - c) graphics? Yes 1 (46)
  - d) database/information retrieval Yes 1 (47)
  - e) other *(please specify)*

  _____ Yes 1 (48)

b) How long have you been using such equipment?

Since 1981 or before	1	Since 1984	4	(49)
Since 1982	2	Since 1985	5	
Since 1983	3	Since 1986	6	

26. Do you use (or have you used) computers in your normal work situation?

Yes, frequently	1	(50)
Yes, sometimes	2	
No	3	

27. If the University introduces a Home Computing Policy which would require students on certain specified courses to rent or buy their own microcomputer meeting a certain specification, would the cost of obtaining this equipment put you off registering for such courses?

	I already own a micro		I don't own a micro	
Yes, I would reconsider my study plans	1	(51)	1	(52)
No, I would still register for such courses	2		2	
I do not plan to study courses with a computing element	3		3	

Please use this space for any other points you would like to make about access to equipment for study purposes.

(53)

1 (54)

(2) (55)

Thank you very much for your help.

Please return this completed form as soon as possible, to the Student Research Centre, Institute of Educational Technology, Walton Hall, using the pre-paid label provided.

REPORTS OF THE STUDENT RESEARCH CENTRE

Copies of SRC reports are available from the Centre on request

	Title	Author	Date
1	Effective Study in the Open University: The Human Dimension	Mary Thorpe, et al	Feb. 1986
2	The Rough and the Smooth - Students' Experiences of OU Study	Robin Mason with Alistair Morgan	Jan. 1986
3	Reactions of Part-time Tutors to Financial Cuts in the Open University	Reg Melton, et al	Feb. 1986
4	Report on the Annual Survey of New Courses in 1985	Clive Lawless & Beryl Crooks	1986
5	Access to Video Equipment for Study Purposes - Undergraduate Students in 1986	Adrian Kirkwood	May 1987
6	Report on the Annual Survey of New Courses in 1986	Clive Lawless	Oct. 1987
7	Access to Microcomputing Equipment for Study Purposes - Undergraduate Students in 1986	Adrian Kirkwood	Sept. 1987

AK2/MMD7